Airwell

Service Manual

SX Series R410A

Indoor Unit	Outdoor Unit
SX 9	ONG9 ST/RC
SX 12	ONG12 ST/RC
SX 15	ONG14 ST/RC
SX 18	GC18 ST/RC
SX 18	GC18T ST/RC
SX 24	OU7-24 ST/RC
SX 24	OU7-24T ST/RC
SX 30	OU8-30 ST/RC
SX 30	OU8-30T ST/RC

REFRIGERANT

COOLING ONLY

R410A

HEAT PUMP

SM SX Ser1-A.3 GB

SEPTEMBER – 2008

CONTENT

LIST OF EFFECTIVE PAGES

Note: Changes in the pages are indicated by a “Revision#” in the footer of each effected page (when none indicates no changes in the relevant page). All pages in the following list represent effected/ non effected pages divided by chapters.

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*Due to constant improvements please note that the data on this service manual can be modified with out notice.
**Photos are not contractual.

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1. INTRODUCTION

1.1 General

The SX split floor and ceiling units range comprise the ST (cooling only) and RC (heat pump) models, as follows:

• **Cooling Only**	SX9ST	SX12ST	SX15ST,
	SX18ST	SX24ST	SX30ST
• **Heat Pump**	SX9RC	SX12RC	SX15RC,
	SX18RC	SX24RC	SX30RC

1.2 Main Features

The SX series benefits from the most advanced technological innovations, namely :

- R410A
- Microprocessor control.
- Infrared remote control, and on unit.
- Possibility for treated air distribution to adjacent room (Accessory kit).
- High COP.
- Easy access to the interconnecting tubing and wiring connections.
- Possibility to connect a condensate pump kit with an integral over flow protection (Accessory kit).
- Automatic treated air sweep (horizontal and vertical)
- Low indoor and outdoor noise levels.
- Easy installation and service.

1.3 Indoor Unit

The indoor unit can be mounted as floor or ceiling type, no special adjustment are needed. it can be easily fitted to many types of residential and commercials applications.

It includes:

- Casing with inlet and outlet grilles.
- Motorized flaps (Horizontal and vertical).
- Advanced electronic control box assembly (storm 10V7).
- Coated indoor coil.
- Mounting plate

1.4 Filtration

The SX series presents several types of air filters:

- Easily accessible, and re-usable pre-filters (mesh)
- Active carbon filter.

1.5 Control

The microprocessor indoor controller, and an infrared remote control, supplied as standard, provide complete operating function and programming. The unit is designed with an on unit control board as well.
For further details please refer to the Operation Manual, Appendix A.

1.6 Outdoor Unit

The SX outdoor units can be installed as floor or wall mounted by using a wall supporting bracket. The metal sheets are protected by anti- corrosion paint work allowing long life resistance. All outdoor units are pre-charged. For further information please refer to the Product Data Sheet, Chapter 2.

It includes :

- A **Rotary** Compressor mounted in a soundproofed compartment.
- Axial fan.
- Outdoor coil with hydrophilic louver fins for RC units.
- Outlet air fan grill.
- Service valves" flare" type connection.
- Interconnecting wiring terminal block.

1.7 Tubing Connections

Flare type interconnecting tubing to be produced on site.
For further details please refer to the Installation Manual, Appendix A

1.8 Accessories

ASK (All Season Kit):

For low ambient working conditions in cooling, an ASK can be installed inside the outdoor unit. This kit allows cooling operation down to outdoor temp of -10 ºC by gradually controlling the outdoor fan speed motor.

RCW Wall Mounted Remote Control

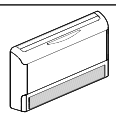
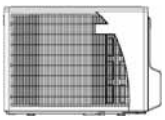
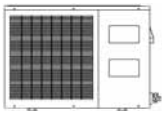
The RCW remote control is mounted on the wall, and controls the unit either as an infrared remote control or as a wired controller. The wired controller can control up to 10 Indoor units with the same program settings and adjustments.
For further details please refer to Optional Accessories, Chapter on this manual.

1.9 Inbox Documentation

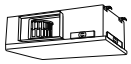
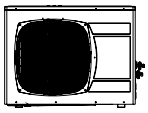
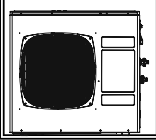
Each unit is supplied with its own installation and operation manuals.

1.10 Matching Table

1.10.1 R410A

OUTDOOR UNITS			INDOOR UNITS											
														
	MODEL	REF'	K9	K11	K15	K18	WNG9	WNG12	WNG14	WNG18	SX9	SX12	SX15	SX18
	ONG9 ST	R410A	√				√				√			
	ONG12 ST	R410A		√				√				√		
	ONG14 ST	R410A			√				√				√	
	ONG9 RC	R410A	√				√				√			
	ONG12 RC	R410A		√				√				√		
	ONG14 RC	R410A			√				√*				√	
	GC18 ST	R410A				√				√				√
	GC18 RC	R410A				√				√				√

√* - the outdoor unit of this combination cannot be matched to other indoor units.

OUTDOOR UNITS			INDOOR UNITS							
										
	MODEL	REF'	KN24	KN30	WNG24	WNG30	SX24	SX30	DNG24	DNG30
	OU724ST	R410A	√		√		√		√	
	OU724T ST	R410A	√		√		√		√	
	OU724 RC	R410A	√		√*		√		√	
	OU724T RC	R410A	√		√*		√		√	
	OU830 ST	R410A		√		√		√		√
	OU830T ST	R410A		√		√		√		√
	OU830 RC	R410A		√		√		√		√
	OU830T RC	R410A		√		√		√		√

√* - the outdoor unit of this combination cannot be matched to other indoor units.

The above tables lists outdoor units and SX indoor units, which can be matched together. In addition the listed outdoor units can be matched with other types of indoor units such as Ducted, Wall Mounted, and Cassettes .

For further information please refer to the relevant Service Manual.

2. PRODUCT DATA SHEET

2.1 SX 9 / ONG-9 R410A

Model Indoor Unit				**SX-9**		
Model Outdoor Unit				**ONG-9**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling Only**	**Cooling**	**Heating**
Capacity (1)			Btu/hr	9080	9080	9520
			kW	2.66	2.66	2.79
Power input (1)			kW	0.825	0.825	0.86
EER (Cooling) or COP(Heating) (1)			W/W	3.22	3.22	3.24
Energy efficiency class				A	A	C
Power supply			V/Ph/Hz	220-240V/Single/50Hz		
Rated current			A	3.7	3.7	4.0
Starting current			A	18.7		
Circuit breaker rating			A	10		
INDOOR	Fan type & quantity			Centrifugal x 2		
	Fan speeds	H/M/L	RPM	740/650/600		
	Air flow (2)	H/M/L	m3/hr	370/330/290		
	External static pressure	Min-Max	Pa	0		
	Sound power level (3)	H/M/L	dB(A)	50/49/47		
	Sound pressure level(4)	H/M/L	dB(A)	39/37/35		
	Moisture removal		l/hr	1.1		
	Condensate drain tube I.D		mm	16		
	Dimensions	WxHxD	mm	820x630x190		
	Weight		kg	21		
	Package dimensions	WxHxD	mm	890x710x280		
	Packaged weight		kg	25		
	Units per pallet		units	14		
	Stacking height		units	7 levels		
OUTDOOR	Refrigerant control			Capillary tube		
	Compressor type, model			Rotary,LG GK113PAG		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H/L	RPM	780		
	Air flow	H/L	m3/hr	1780		
	Sound power level	H/L	dB(A)	58	60	
	Sound pressure level(4)	H/L	dB(A)	48	49	
	Dimensions	WxHxD	mm	795x610x290		
	Weight		kg	34	35	
	Package dimensions	WxHxD	mm	945x655x395		
	Packaged weight		kg	38	39	
	Units per pallet		Units	9		
	Stacking height		units	3 levels		
	Refrigerant type			R410A		
	Refrigerant chargless distance		kg/m	1kg/7.5m		
	Additional charge per 1 meter		g/m	7.5m<Lin<15m:+10g/m		
	Connections between units	Liquid line	In.(mm)	1/4"(6.35)		
		Suction line	In.(mm)	3/8"(9.53)		
		Max. tubing length	m.	Max.15		
		Max. height difference	m.	Max.7		
Operation control type				Remote control		
Heating elements			kW			
Others						

(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

2.2 SX 12 / ONG-12 R410A

Model Indoor Unit				**SX-12**		
Model Outdoor Unit				**ONG-12**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling Only**	**Cooling**	**Heating**
Capacity (1)			Btu/hr	12010	12010	12620
			kW	3.52	3.52	3.7
Power input (1)			kW	1.155	1.155	1.15
EER (Cooling) or COP(Heating) (1)			W/W	3.05	3.05	3.22
Energy efficiency class				B	B	C
Power supply			V/Ph/Hz	220-240V/Single/50Hz		
Rated current			A	5.2	5.2	5.2
Starting current			A	24		
Circuit breaker rating			A	15		
INDOOR	Fan type & quantity			Centrifugal x 2		
	Fan speeds	H/M/L	RPM	830/770/710		
	Air flow (2)	H/M/L	m3/hr	420/390/350		
	External static pressure	Min-Max	Pa	0		
	Sound power level (3)	H/M/L	dB(A)	56/53/51		
	Sound pressure level(4)	H/M/L	dB(A)	45/41/38		
	Moisture removal		l/hr	1.5		
	Condensate drain tube I.D		mm	16		
	Dimensions	WxHxD	mm	820x630 x190		
	Weight		kg	22		
	Package dimensions	WxHxD	mm	890x710x280		
	Packaged weight		kg	26		
	Units per pallet		units	14		
	Stacking height		units	7 levels		
OUTDOOR	Refrigerant control			Capillary tube		
	Compressor type, model			Rotary, Toshiba PA145X2C-4FT		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H/L	RPM	810		
	Air flow	H/L	m3/hr	1850		
	Sound power level	H/L	dB(A)	62	64	
	Sound pressure level(4)	H/L	dB(A)	52	53	
	Dimensions	WxHxD	mm	795x610x290		
	Weight		kg	35	36	
	Package dimensions	WxHxD	mm	945x655x395		
	Packaged weight		kg	39	40	
	Units per pallet		Units	9		
	Stacking height		units	3 levels		
	Refrigerant type			R410A		
	Refrigerant chargless distance		kg/m	1.23kg/7.5m	1.27kg/7.5m	
	Additional charge per 1 meter		g/m	7.5m<Lin<15m:+15g/m		
	Connections between units	Liquid line	In.(mm)	1/4"(6.35)		
		Suction line	In.(mm)	3/8"(9.53)		
		Max. tubing length	m.	Max.15		
		Max. height difference	m.	Max.7		
Operation control type				Remote control		
Heating elements			kW			
Others						

(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

2.3 SX 15 / ONG-14 R410A

Model Indoor Unit				**SX-15**		
Model Outdoor Unit				**ONG-14**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling Only**	**Cooling**	**Heating**
Capacity (1)			Btu/hr	13990	13990	15350
			kW	4.1	4.1	4.5
Power input (1)			kW	1.355	1.355	1.380
EER (Cooling) or COP(Heating) (1)			W/W	3.03	3.03	3.26
Energy efficiency class				B	B	C
Power supply			V/Ph/Hz	220-240V/Single/50Hz		
Rated current			A	6.4	6.4	6.5
Starting current			A	30		
Circuit breaker rating			A	15		
INDOOR	Fan type & quantity			Centrifugal x 2		
	Fan speeds	H/M/L	RPM	1000/780/720		
	Air flow (2)	H/M/L	m3/hr	510/390/350		
	External static pressure	Min-Max	Pa	0		
	Sound power level (3)	H/M/L	dB(A)	57/53/49		
	Sound pressure level(4)	H/M/L	dB(A)	48/43/38		
	Moisture removal		l/hr	1.9		
	Condensate drain tube I.D		mm	16		
	Dimensions	WxHxD	mm	820x630 x190		
	Weight		kg	22		
	Package dimensions	WxHxD	mm	890x710x280		
	Packaged weight		kg	26		
	Units per pallet		units	14		
	Stacking height		units	7 levels		
OUTDOOR	Refrigerant control			Capillary tube		
	Compressor type, model			Rotary, MITSUBISHI RN165VHSMT		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H/L	RPM	920		
	Air flow	H/L	m3/hr	2160		
	Sound power level	H/L	dB(A)	63	64	
	Sound pressure level(4)	H/L	dB(A)	53	54	
	Dimensions	WxHxD	mm	795x610x290		
	Weight		kg	41.5	42.2	
	Package dimensions	WxHxD	mm	945x655x395		
	Packaged weight		kg	45.5	46.5	
	Units per pallet		Units	9		
	Stacking height		units	3 levels		
	Refrigerant type			R410A		
	Refrigerant chargless distance		kg/m	1.34kg/7.5m		
	Additional charge per 1 meter		g/m	7.5m<Lin<15m:+25g/m		
	Connections between units	Liquid line	In.(mm)	1/4"(6.35)		
		Suction line	In.(mm)	1/2"(12.7)		
		Max. tubing length	m.	Max.15		
		Max. height difference	m.	Max.7		
Operation control type				Remote control		
Heating elements			kW			
Others						

(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

2.4 SX 18 / GC-18 R410A

Model Indoor Unit				**SX-18**		
Model Outdoor Unit				**GC-18**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling Only**	**Cooling**	**Heating**
Capacity (1)			Btu/hr	18770	18770	19620
			kW	5.5	5.5	5.75
Power input (1)			kW	1.82	1.82	1.77
EER (Cooling) or COP(Heating) (1)			W/W	3.02	3.02	3.25
Energy efficiency class				B	B	C
Power supply			V/Ph/Hz	220-240V/Single/50Hz		
Rated current			A	8.2	8.2	7.9
Starting current			A	43		
Circuit breaker rating			A	15		
INDOOR	Fan type & quantity			Centrifugal x 2		
	Fan speeds	H/M/L	RPM	1100/1000/900		
	Air flow (2)	H/M/L	m3/hr	930/820/700		
	External static pressure	Min-Max	Pa	0		
	Sound power level (3)	H/M/L	dB(A)	65/60/56		
	Sound pressure level(4)	H/M/L	dB(A)	51/48/45		
	Moisture removal		l/hr	1.9		
	Condensate drain tube I.D		mm	16		
	Dimensions	WxHxD	mm	1200x630x190		
	Weight		kg	30		
	Package dimensions	WxHxD	mm	1270x710x280		
	Packaged weight		kg	35		
	Units per pallet		units	7		
	Stacking height		units	7 levels		
OUTDOOR	Refrigerant control			Capillary tube		
	Compressor type, model			Rotary,LG GJ208PAA		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H/L	RPM	815		
	Air flow	H/L	m3/hr	2480		
	Sound power level	H/L	dB(A)	68		
	Sound pressure level(4)	H/L	dB(A)	58		
	Dimensions	WxHxD	mm	846x690x302		
	Weight		kg	56		
	Package dimensions	WxHxD	mm	990x470x430		
	Packaged weight		kg	60	61	
	Units per pallet		Units	9		
	Stacking height		units	3 levels		
	Refrigerant type			R410A		
	Refrigerant chargless distance		kg/m	1.6kg/7.5m		
	Additional charge per 1 meter		g/m	7.5m<Lin<25m:+25g/m		
	Connections between units	Liquid line	In.(mm)	1/4"(6.35)		
		Suction line	In.(mm)	1/2"(12.7)		
		Max. tubing length	m.	Max.25		
		Max. height difference	m.	Max.15		
Operation control type				Remote control		
Heating elements			kW			
Others						

(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

2.5 SX 18 / GC-18 3PH R410A

Model Indoor Unit				**SX-18**		
Model Outdoor Unit				**GC-18 3PH**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling Only**	**Cooling**	**Heating**
Capacity (1)			Btu/hr	18760	18760	19600
			kW	5.5	5.5	5.75
Power input (1)			kW	1.77	1.77	1.69
EER (Cooling) or COP(Heating) (1)			W/W	3.12	3.12	3.41
Energy efficiency class				B	B	B
Power supply			V/Ph/Hz	380/3/50Hz		
Rated current			A	3.1	3.1	3
Starting current			A	26		
Circuit breaker rating			A	15		
INDOOR	Fan type & quantity			Centrifugal x 2		
	Fan speeds	H/M/L	RPM	1100/1000/900		
	Air flow (2)	H/M/L	m3/hr	930/820/700		
	External static pressure	Min-Max	Pa	0		
	Sound power level (3)	H/M/L	dB(A)	65/60/56		
	Sound pressure level(4)	H/M/L	dB(A)	51/48/45		
	Moisture removal		l/hr	1.9		
	Condensate drain tube I.D		mm	16		
	Dimensions	WxHxD	mm	1200x630x190		
	Weight		kg	30		
	Package dimensions	WxHxD	mm	1270x710x280		
	Packaged weight		kg	35		
	Units per pallet		units	7		
	Stacking height		units	7 levels		
OUTDOOR	Refrigerant control			Capillary tube		
	Compressor type, model			Rotary ,Mitsubishi NN21YDAMT		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H/L	RPM	815		
	Air flow	H/L	m3/hr	2480		
	Sound power level	H/L	dB(A)	68		
	Sound pressure level(4)	H/L	dB(A)	58		
	Dimensions	WxHxD	mm	846x690x302		
	Weight		kg	56		
	Package dimensions	WxHxD	mm	990x770x430		
	Packaged weight		kg	60	61	
	Units per pallet		Units	9		
	Stacking height		units	3 levels		
	Refrigerant type			R410A		
	Refrigerant chargless distance		kg/m	1.89kg/7.5m		
	Additional charge per 1 meter		g/m	4m≤Length≤10m +0g 10m≤Length≤18m +240g 18m≤Length≤25m +560g		
	Connections between units	Liquid line	In.(mm)	1/4"(6.35)		
		Suction line	In.(mm)	1/2"(12.7)		
		Max .tubing length	m.	Max.25		
		Max. height difference	m.	Max.15		
Operation control type				Remote control		
Heating elements			kW			
Others				All Season kit factory option		

(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

2.6 SX 24 / OU7-24 R410A

Model Indoor Unit				**SX-24**		
Model Outdoor Unit				**OU7-24**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling Only**	**Cooling**	**Heating**
Capacity (1)			Btu/hr	23300	23300	24000
			kW	6.83	6.83	7.03
Power input (1)			kW	2.27	2.27	2.13
EER (Cooling) or COP(Heating) (1)			W/W	3.01	3.01	3.03
Energy efficiency class				B	B	C
Power supply			V/Ph/Hz	220-240V/Single/50Hz		
Rated current			A	9.7	9.7	8.4
Starting current			A	63		
Circuit breaker rating			A	20		
INDOOR	Fan type & quantity			Centrifugal x 2		
	Fan speeds	H/M/L	RPM	1200/980/840		
	Air flow (2)	H/M/L	m3/hr	1000/900/780		
	External static pressure	Min-Max	Pa	0		
	Sound power level (3)	H/M/L	dB(A)	64/62/59		
	Sound pressure level(4)	H/M/L	dB(A)	53/51/48		
	Moisture removal		l/hr	2.7		
	Condensate drain tube I.D		mm	16		
	Dimensions	WxHxD	mm	1200x630x190		
	Weight		kg	33		
	Package dimensions	WxHxD	mm	1270x710x280		
	Packaged weight		kg	38		
	Units per pallet		units	7		
	Stacking height		units	7 levels		
OUTDOOR	Refrigerant control			Capillary tube +Restrictor		
	Compressor type ,model			Rotary, Mitsubishi NN27VBAMT		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H/L	RPM	850		
	Air flow	H/L	m3/hr	3100		
	Sound power level	H/L	dB(A)	67		
	Sound pressure level(4)	H/L	dB(A)	58		
	Dimensions	WxHxD	mm	900x680x340		
	Weight		kg	74		
	Package dimensions	WxHxD	mm	985x730x406		
	Packaged weight		kg	77		
	Units per pallet		Units	6		
	Stacking height		units	2 levels		
	Refrigerant type			R410A		
	Refrigerant chargless distance		kg/m	2.16kg/12.5m		
	Additional charge per 1 meter		g/m	12.5m<Add 430g<25m 25m<Add 530g<30m		
	Connections between units	Liquid line	In.(mm)	3/8"(9.53)		
		Suction line	In.(mm)	5/8"(15.88)		
		Max .tubing length	m.	Max.30		
		Max .height difference	m.	Max.15		
Operation control type				Remote control		
Heating elements			kW			
Others				All Season kit factory option		

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(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

2.7 SX 24 / OU7-24Z R410A

Model Indoor Unit				**SX-24**		
Model Outdoor Unit				**OU7-24Z R410A**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling Only**	**Cooling**	**Heating**
Capacity (1)			Btu/hr	23300	23300	24000
			kW	6.83	6.83	7.03
Power input (1)			kW	2.27	2.27	2.13
EER (Cooling) or COP(Heating) (1)			W/W	3.01	3.01	3.03
Energy efficiency class				B	B	C
Power supply			V/Ph/Hz	220-240V/Single/50Hz		
Rated current			A	9.7	9.7	8.4
Starting current			A	63		
Circuit breaker rating			A	20		
INDOOR	Fan type & quantity			Centrifugal x 2		
	Fan speeds	H/M/L	RPM	1200/980/840		
	Air flow (2)	H/M/L	m3/hr	1000/900/780		
	External static pressure	Min-Max	Pa	0		
	Sound power level (3)	H/M/L	dB(A)	64/62/59		
	Sound pressure level(4)	H/M/L	dB(A)	53/51/48		
	Moisture removal		l/hr	2.7		
	Condensate drain tube I.D		mm	16		
	Dimensions	WxHxD	mm	1200x630x190		
	Weight		kg	33		
	Package dimensions	WxHxD	mm	1270x710x280		
	Packaged weight		kg	38		
	Units per pallet		units	7		
	Stacking height		units	7 levels		
OUTDOOR	Refrigerant control			Capillary tube +Restrictor		
	Compressor type ,model			Rotary		
	Fan type & quantity			Axial x 1		
	Fan speeds	H/L	RPM	850		
	Air flow	H/L	m3/hr	3100		
	Sound power level	H/L	dB(A)	67		
	Sound pressure level(4)	H/L	dB(A)	58		
	Dimensions	WxHxD	mm	900x680x340		
	Weight		kg	78		
	Package dimensions	WxHxD	mm	985x730x435		
	Packaged weight		kg	82		
	Units per pallet		Units	6		
	Stacking height		units	2 levels		
	Refrigerant type			R410A		
	Refrigerant chargless distance		kg/m	2.02kg/15m		
	Additional charge per 1 meter		g/m			
	Connections between units	Liquid line	In.(mm)	3/8"(9.53)		
		Suction line	In.(mm)	5/8"(15.88)		
		Max .tubing length	m.	Max.15		
		Max .height difference	m.	Max.7		
Operation control type				LCD Remote control		
Heating elements			kW			
Others						

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(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

2.8 SX 24 / OU7-24T R410A

Model Indoor Unit				**SX-24**		
Model Outdoor Unit				**OU7-24T**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling Only**	**Cooling**	**Heating**
Capacity (1)			Btu/hr	23300	23300	24000
			kW	6.83	6.83	7.03
Power input (1)			kW	2.27	2.27	2.13
EER (Cooling) or COP(Heating) (1)			W/W	3.01	3.01	3.03
Energy efficiency class				B	B	C
Power supply			V/Ph/Hz	400/3/50		
Rated current			A	3x7	3x7	3x7
Starting current			A	55		
Circuit breaker rating			A	3x16		
INDOOR	Fan type & quantity			Centrifugal x 2		
	Fan speeds	H/M/L	RPM	1200/980/840		
	Air flow (2)	H/M/L	m3/hr	1000/900/780		
	External static pressure	Min-Max	Pa	0		
	Sound power level (3)	H/M/L	dB(A)	64/62/59		
	Sound pressure level(4)	H/M/L	dB(A)	53/51/48		
	Moisture removal		l/hr	2.7		
	Condensate drain tube I.D		mm	16		
	Dimensions	WxHxD	mm	1200x630x190		
	Weight		kg	33		
	Package dimensions	WxHxD	mm	1270x710x280		
	Packaged weight		kg	38		
	Units per pallet		units	7		
	Stacking height		units	7 levels		
OUTDOOR	Refrigerant control			Capillary tube +Restrictor		
	Compressor type ,model			Rotary, Mitsubishi NN27VBAMT		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H/L	RPM	850		
	Air flow	H/L	m3/hr	3100		
	Sound power level	H/L	dB(A)	67		
	Sound pressure level(4)	H/L	dB(A)	58		
	Dimensions	WxHxD	mm	900x680x340		
	Weight		kg	74		
	Package dimensions	WxHxD	mm	985x730x406		
	Packaged weight		kg	77		
	Units per pallet		Units	6		
	Stacking height		units	2 levels		
	Refrigerant type			R410A		
	Refrigerant chargless distance		kg/m	2.16kg/12.5m		
	Additional charge per 1 meter		g/m	12.5m<Add 430g<25m 25m<Add 530g<30m		
	Connections between units	Liquid line	In.(mm)	3/8"(9.53)		
		Suction line	In.(mm)	5/8"(15.88)		
		Max .tubing length	m.	Max.30		
		Max .height difference	m.	Max.15		
Operation control type				Remote control		
Heating elements			kW			
Others				All Season kit factory option		

(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

2.9 SX 30 / OU8-30 R410A

Model Indoor Unit				**SX 30**		
Model Outdoor Unit				**OU8-30**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling Only**	**Cooling**	**Heating**
Capacity (1)			Btu/hr	29,100	29,100	29,500
			kW	8.52	8.52	8.65
Power input (1)			kW	2.99	2.99	2.79
EER (Cooling) or COP(Heating) (1)			W/W	2.85	2.85	3.10
Energy efficiency class				C	C	D
Power supply			V/Ph/Hz	220-240V/Single/50Hz		
Rated current			A	12.2	12.2	11.3
Starting current			A	80		
Circuit breaker rating			A	25		
INDOOR	Fan type & quantity			Centrifugal x 2		
	Fan speeds	H/M/L	RPM	1360/1200/1010		
	Air flow (2)	H/M/L	m3/hr	1020/895/700		
	External static pressure	Min-Max	Pa	N/A		
	Sound power level (3)	H/M/L	dB(A)	68/64/60		
	Sound pressure level(4)	H/M/L	dB(A)	56/53/49		
	Moisture removal		l/hr	3.4		
	Condensate drain tube I.D		mm	16		
	Dimensions	WxHxD	mm	1200x630x190		
	Weight		kg	32		
	Package dimensions	WxHxD	mm	1270x710x280		
	Packaged weight		kg	36		
	Units per pallet		units	7		
	Stacking height		units	7 Levels		
OUTDOOR	Refrigerant control			Capillary		
	Compressor type, model			Rotary, Mitsubishi NN33VAAMT		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H/L	RPM	850		
	Air flow	H/L	m3/hr	3150		
	Sound power level	H/L	dB(A)	69		
	Sound pressure level(4)	H/L	dB(A)	59		
	Dimensions	WxHxD	mm	900x860x340		
	Weight		kg	78		
	Package dimensions	WxHxD	mm	985x907x435		
	Packaged weight		kg	82		
	Units per pallet		Units	6		
	Stacking height		units	2 Levels		
	Refrigerant type			R410A		
	Refrigerant chargless distance		kg/m	2.42kg/15m		
	Additional charge per 1 meter		g/m	30		
	Connections between units	Liquid line	In.(mm)	3/8"(9.53)		
		Suction line	In.(mm)	5/8"(15.88)		
		Max .tubing length	m.	Max.30		
		Max .height difference	m.	Max.15		
Operation control type				Remote control		
Heating elements			kW			
Others				Crankcase heater (50W)		

(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

2.10 SX 30 / OU8-30T R410A

Model Indoor Unit				**SX 30**		
Model Outdoor Unit				**OU8-30T**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling Only**	**Cooling**	**Heating**
Capacity (1)			Btu/hr	28300	28300	28,300
			kW	8.30	8.30	8.30
Power input (1)			kW	2.77	2.77	2.63
EER (Cooling) or COP(Heating) (1)			W/W	3.00	3.00	3.15
Energy efficiency class				C	C	D
Power supply			V/Ph/Hz	400V/3/50		
Rated current			A	3x5.2	3x5.2	3x5.1
Starting current			A	35		
Circuit breaker rating			A	3x16		
INDOOR	Fan type & quantity			Centrifugal x 2		
	Fan speeds	H/M/L	RPM	1360/1200/1010		
	Air flow (2)	H/M/L	m3/hr	1020/895/700		
	External static pressure	Min-Max	Pa	N/A		
	Sound power level (3)	H/M/L	dB(A)	68/64/60		
	Sound pressure level(4)	H/M/L	dB(A)	56/53/49		
	Moisture removal		l/hr	3.4		
	Condensate drain tube I.D		mm	16		
	Dimensions	WxHxD	mm	1200x630x190		
	Weight		kg	32		
	Package dimensions	WxHxD	mm	1270x710x280		
	Packaged weight		kg	36		
	Units per pallet		units	7		
	Stacking height		units	7 Levels		
OUTDOOR	Refrigerant control			Capillary		
	Compressor type, model			Rotary, Mitsubishi NN33VAAMT		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H/L	RPM	850		
	Air flow	H/L	m3/hr	3150		
	Sound power level	H/L	dB(A)	69		
	Sound pressure level(4)	H/L	dB(A)	59		
	Dimensions	WxHxD	mm	900x860x340		
	Weight		kg	78		
	Package dimensions	WxHxD	mm	985x907x435		
	Packaged weight		kg	82		
	Units per pallet		Units	6		
	Stacking height		units	2 Levels		
	Refrigerant type			R410A		
	Refrigerant chargless distance		kg/m	2.42kg/15m		
	Additional charge per 1 meter		g/m	30		
	Connections between units	Liquid line	In.(mm)	3/8"(9.53)		
		Suction line	In.(mm)	5/8"(15.88)		
		Max .tubing length	m.	Max.30		
		Max .height difference	m.	Max.15		
Operation control type				Remote control		
Heating elements			kW			
Others				Crankcase heater (50W)		

(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

3. RATING CONDITIONS

Standard conditions in accordance with ISO 5151, ISO 13253 (for ducted units) and EN 14511.

Cooling:
Indoor: 27°C DB 19°C WB
Outdoor: 35 °C DB

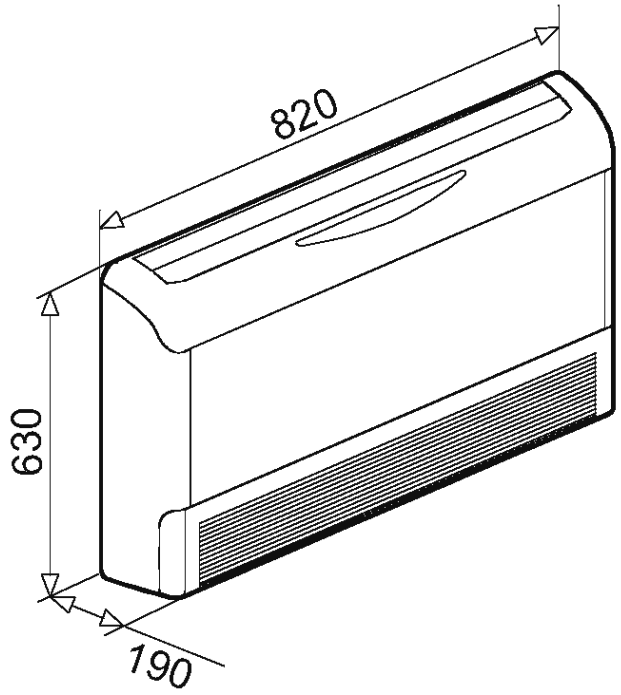
Heating:
Indoor: 20°C DB
Outdoor: 7°C DB 6°C WB

3.1 Operating Limits R410A

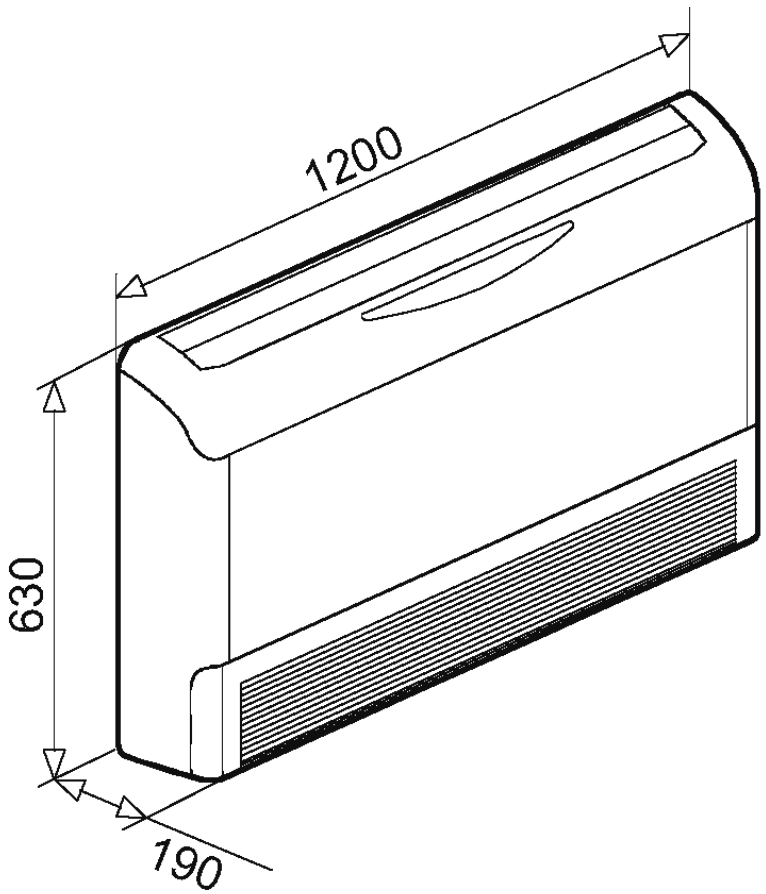
		Indoor	Outdoor
Cooling	Upper limit	32°C DB 23°C WB	46°C DB
	Lower limit	21°C DB 15°C WB	21°C DB
Heating	Upper limit	27°C DB	24°C DB 18°C WB
	Lower limit	20°C DB	-9°C DB -10°C WB
Voltage	1PH	198 – 264 V	
	3PH	360 – 440 V	

4. OUTLINE DIMENSIONS

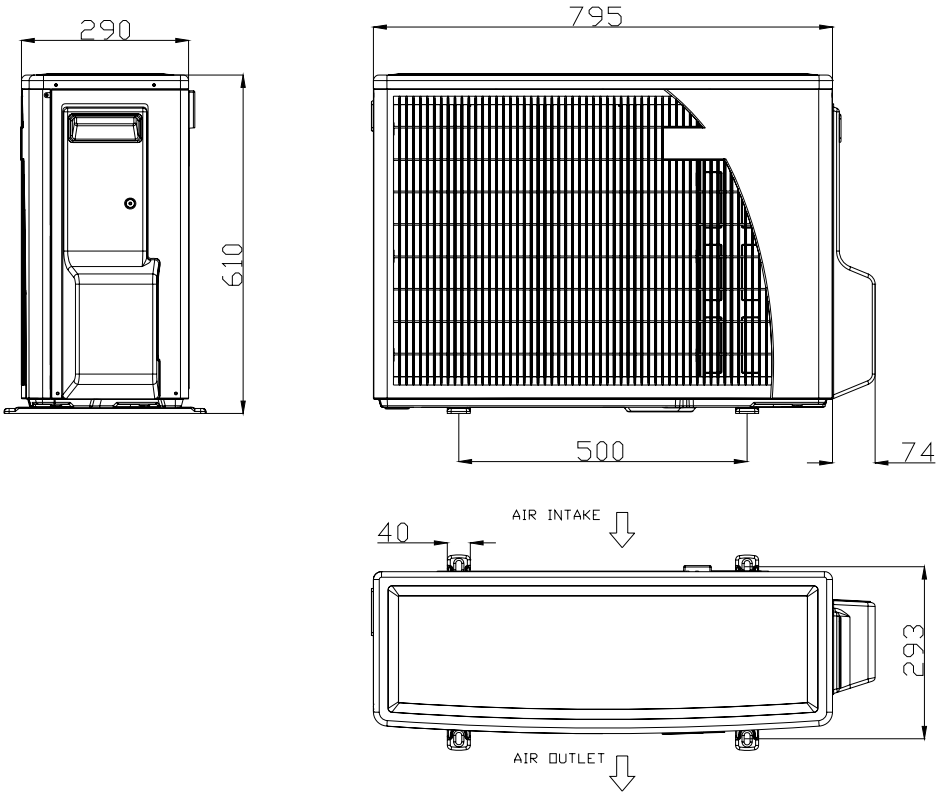
4.1 Indoor Unit : SX 9, 12, 15 R410A



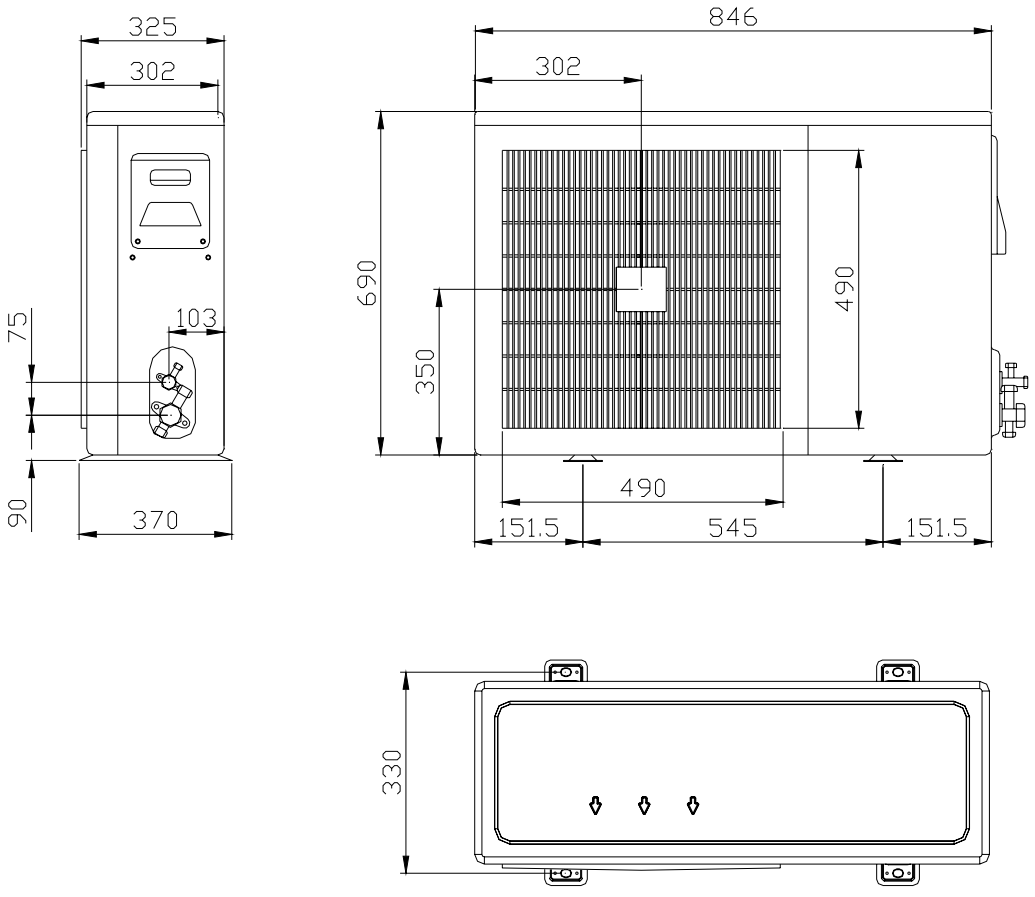
4.2 Indoor Unit : SX 18, 24, 30 R410A



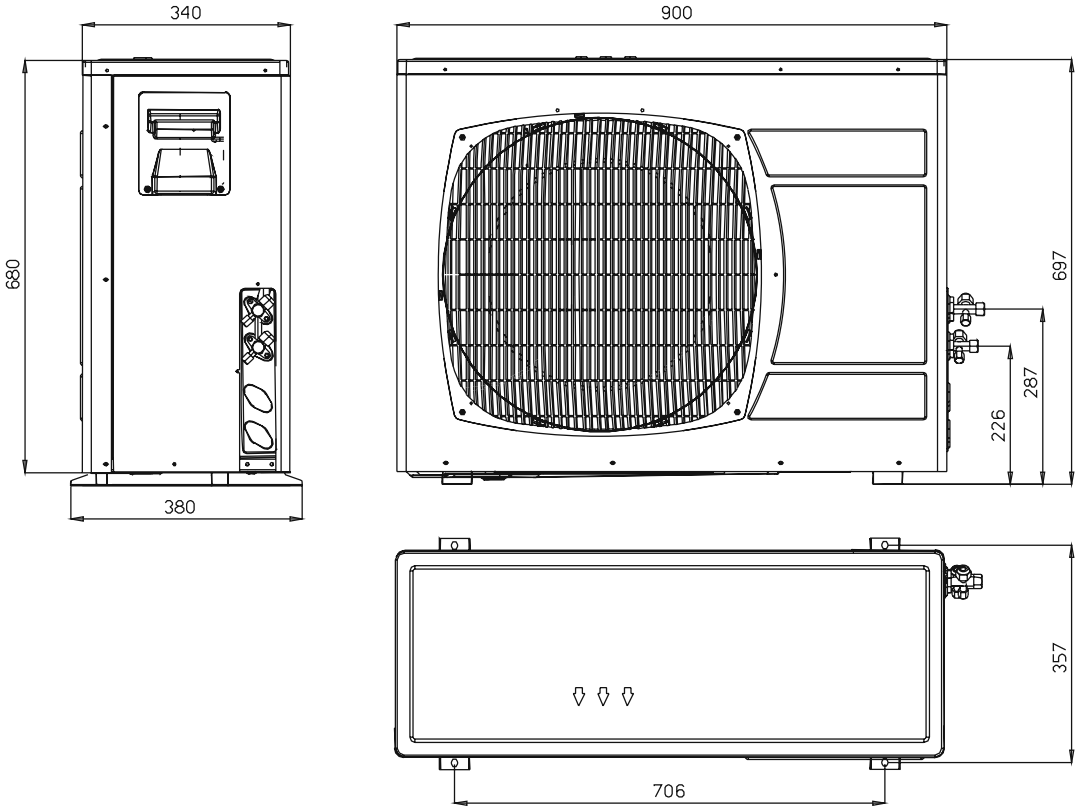
4.3 Outdoor Unit : ONG 9, 12, 14



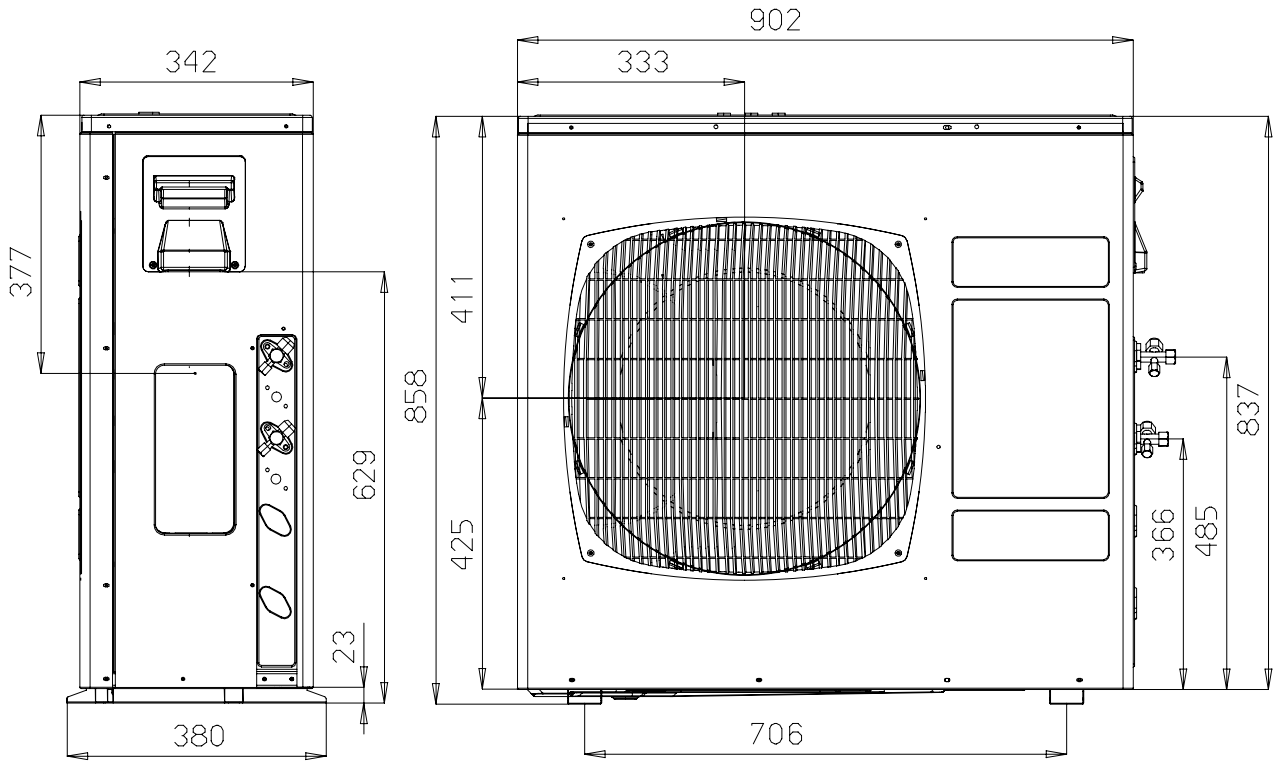
4.4 Outdoor Unit : GC 18



4.5 Outdoor Unit : OU7-24 / OU7-24Z



4.6 Outdoor Unit : OU8-30



5. PERFORMANCE DATA

5.1 SX 9 / ONG9 R410A

5.1.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING AIR DB OU COIL (°C)	DATA	ENTERING AIR WB/DB ID COIL (°C)				
		15/21	17/24	19/27	21/29	23/32
15(1)	TC	2.80	2.90	2.97	3.04	3.09
	SC	1.85	1.93	2.01	2.06	2.09
	PI	0.59	0.59	0.59	0.59	0.60
20(1)	TC	2.71	2.86	2.95	3.02	3.08
	SC	1.81	1.91	1.99	2.05	2.09
	PI	0.64	0.64	0.64	0.65	0.65
25	TC	2.57	2.77	2.91	3.00	3.07
	SC	1.77	1.88	1.98	2.03	2.07
	PI	0.69	0.70	0.70	0.70	0.71
30	TC	2.40	2.61	2.82	2.92	3.01
	SC	1.71	1.82	1.93	1.99	2.03
	PI	0.74	0.76	0.76	0.77	0.78
35	TC	2.22	2.41	**2.66**	2.79	2.93
	SC	1.63	1.75	**1.89**	1.94	1.98
	PI	0.80	0.82	**0.83**	0.84	0.84
40	TC	2.02	2.20	2.40	2.62	2.76
	SC	1.53	1.65	1.79	1.84	1.88
	PI	0.87	0.88	0.89	0.91	0.91
46	TC	1.75	1.92	2.11	2.33	2.51
	SC	1.41	1.51	1.63	1.69	1.72
	PI	0.95	0.96	0.98	1.00	1.01

LEGEND

TC – Total Cooling Capacity, kW
SC – Sensible Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

(1) Marked area is below standard operating limits. For operating in low ambient conditions, refer to Optional Accessories (Chapter 15).

5.1.2 Heating Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

	ENTERING AIR DB ID COIL (°C)					
	15		20		25	
ENTERING AIR WB OU COIL (°C)	TH	PI	TH	PI	TH	PI
-10	1.46	0.69	1.41	0.73	1.35	0.77
-7	1.58	0.71	1.52	0.74	1.46	0.78
-2	1.67	0.71	1.62	0.76	1.56	0.80
2	2.04	0.75	1.95	0.80	1.87	0.84
6	2.87	0.80	**2.79**	**0.86**	2.69	0.91
10	3.12	0.85	3.04	0.91	2.96	0.97
15	3.38	0.89	3.29	0.95	3.21	1.01
20	3.56	0.91	3.47	0.99	3.38	1.07

* the above chart includes the weighted deicing infleuence.

LEGEND

TH – Total Heating Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

5.2 Capacity Correction Factor Due to Tubing Length

5.2.1 Cooling

TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.02	**1**	0.961	0.950	---	---	---	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

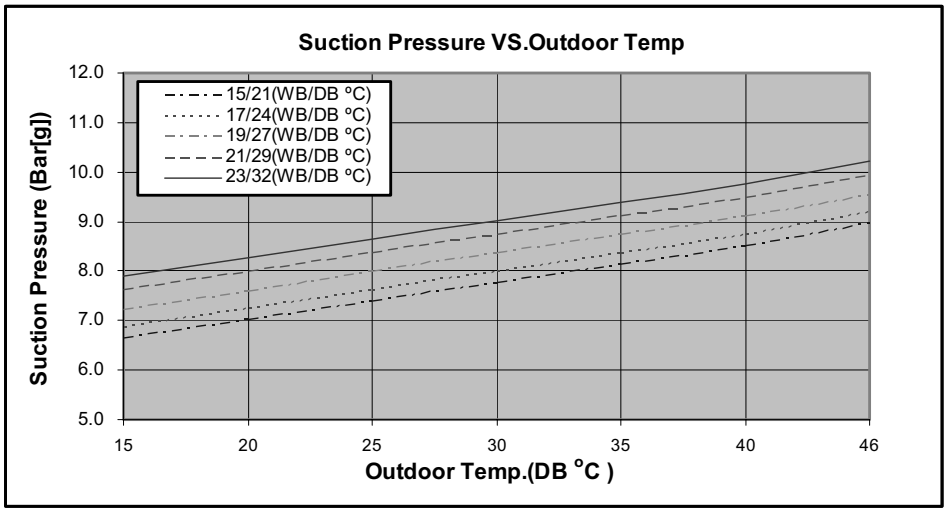
5.2.2 Heating

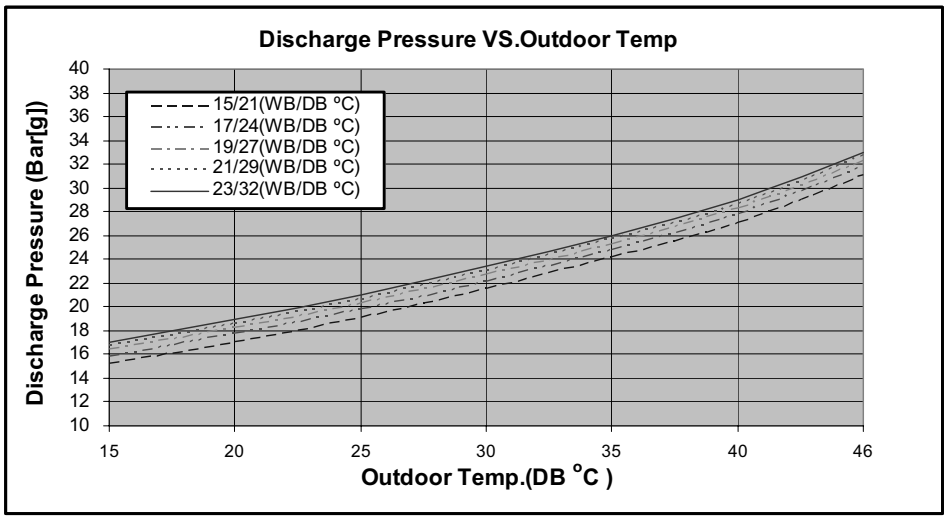
TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.04	**1**	0.975	0.961	---	---	---	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

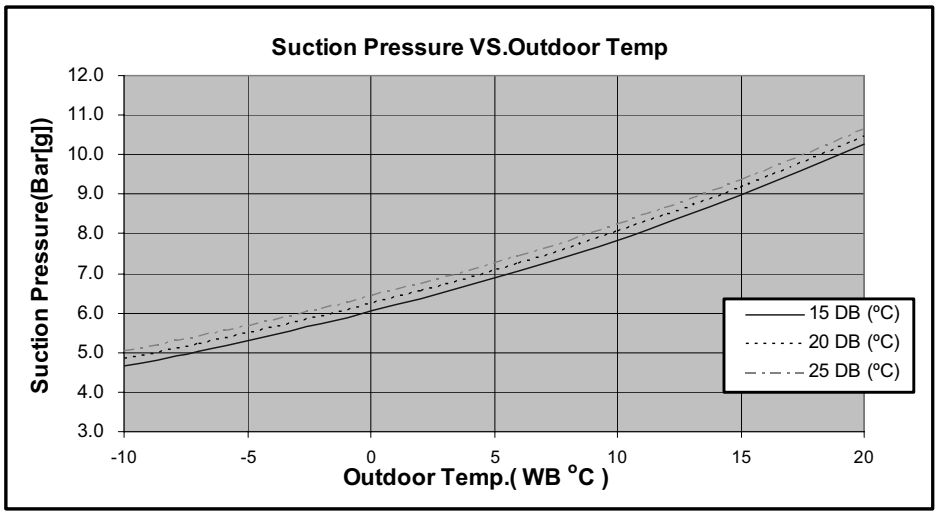
5.3 Pressure Curves.

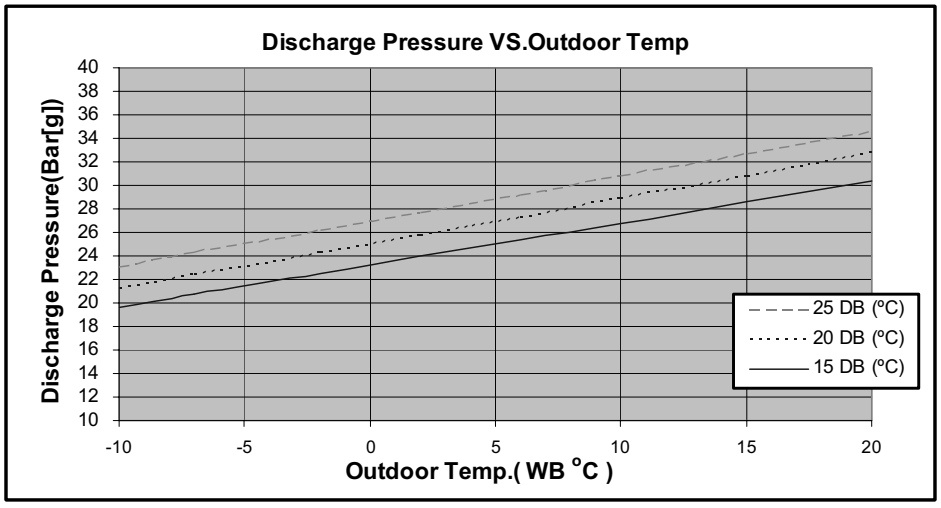
5.3.1 Cooling.





5.3.2 Heating.


Suction Pressure VS.Outdoor Temp
Suction Pressure(Bar[g])
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
-10
-5
0
5
10
15
20
Outdoor Temp.(WB °C)
15 DB (ºC)
20 DB (ºC)
25 DB (ºC)


Discharge Pressure VS.Outdoor Temp
Discharge Pressure(Bar[g])
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
-10
-5
0
5
10
15
20
Outdoor Temp.(WB °C)
25 DB (ºC)
20 DB (ºC)
15 DB (ºC)

5.4 SX 12 / ONG12 R410A

5.4.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING AIR DB OU COIL (°C)	DATA	ENTERING AIR WB/DB ID COIL (°C)				
		15/21	17/24	19/27	21/29	23/32
15(1)	TC	3.71	3.84	3.93	4.03	4.09
	SC	2.40	2.50	2.60	2.66	2.71
	PI	0.82	0.82	0.83	0.83	0.83
20(1)	TC	3.59	3.78	3.90	4.00	4.08
	SC	2.35	2.48	2.58	2.66	2.71
	PI	0.89	0.90	0.90	0.90	0.91
25	TC	3.40	3.67	3.86	3.97	4.07
	SC	2.29	2.43	2.56	2.64	2.69
	PI	0.96	0.97	0.98	0.98	0.99
30	TC	3.18	3.46	3.74	3.87	3.98
	SC	2.22	2.36	2.51	2.58	2.63
	PI	1.04	1.06	1.07	1.07	1.08
35	TC	2.94	3.19	**3.52**	3.70	3.87
	SC	2.11	2.26	**2.45**	2.52	2.57
	PI	1.12	1.14	**1.16**	1.17	1.18
40	TC	2.67	2.91	3.18	3.47	3.65
	SC	1.99	2.14	2.32	2.39	2.44
	PI	1.21	1.23	1.25	1.27	1.28
46	TC	2.32	2.54	2.79	3.08	3.32
	SC	1.83	1.96	2.11	2.19	2.24
	PI	1.32	1.34	1.37	1.39	1.41

LEGEND

TC – Total Cooling Capacity, kW
SC – Sensible Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

(1) Marked area is below standard operating limits. For operating in low ambient conditions, refer to Optional Accessories (Chapter 15).

5.4.2 Heating Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

	ENTERING AIR DB ID COIL (°C)					
	15		20		25	
ENTERING AIR WB OU COIL (°C)	TH	PI	TH	PI	TH	PI
-10	1.94	0.92	1.87	0.98	1.79	1.03
-7	2.09	0.94	2.02	0.99	1.94	1.05
-2	2.22	0.95	2.15	1.01	2.07	1.07
2	2.70	1.00	2.59	1.06	2.48	1.13
6	3.81	1.08	**3.70**	**1.15**	3.57	1.22
10	4.14	1.14	4.03	1.21	3.92	1.30
15	4.48	1.18	4.37	1.28	4.26	1.36
20	4.72	1.22	4.61	1.32	4.48	1.43

* the above chart includes the weighted deicing infleuence.

LEGEND

TH – Total Heating Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

5.5 Capacity Correction Factor Due to Tubing Length

5.5.1 Cooling

TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.03	**1**	0.961	0.948	—	—	—	—	—

* Minimum recommended tubing length between indoor and outdoor units is 3m.

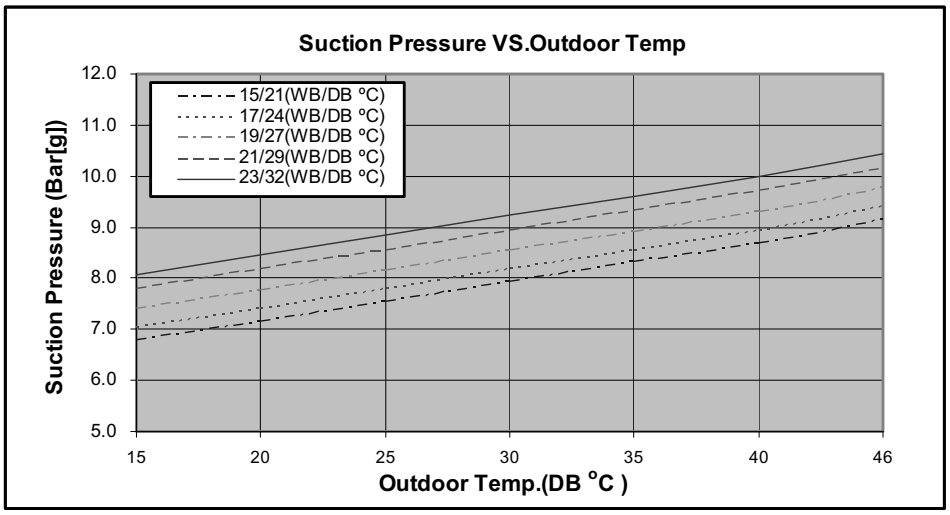
5.5.2 Heating

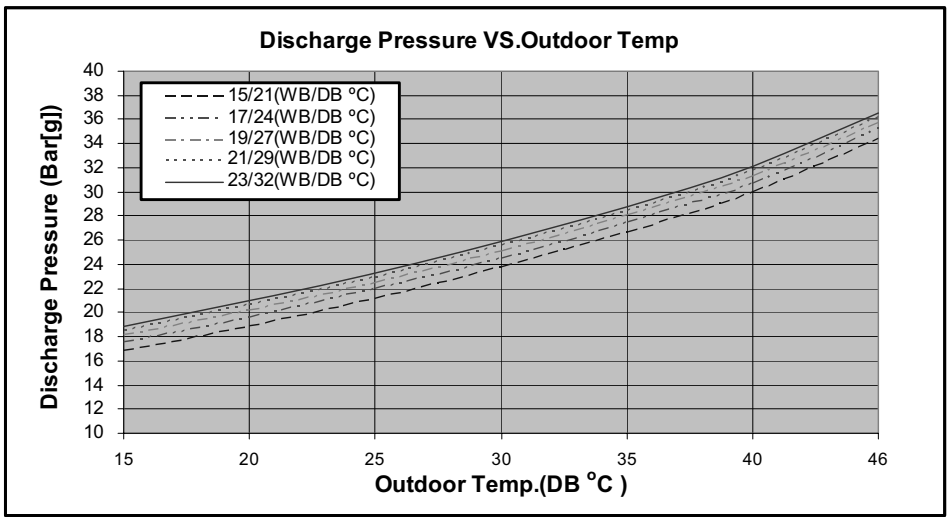
TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.05	**1**	0.975	0.963	—	—	—	—	—

* Minimum recommended tubing length between indoor and outdoor units is 3m.

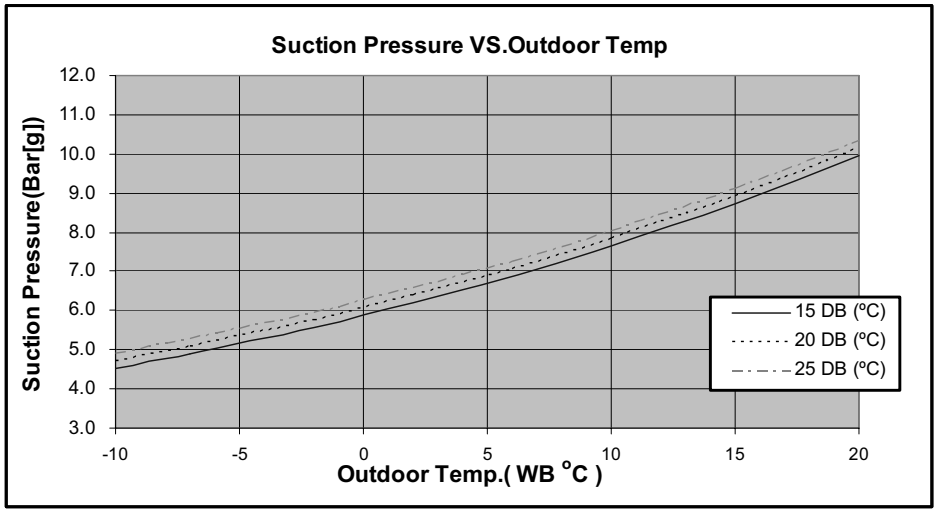
5.6 Pressure Curves.

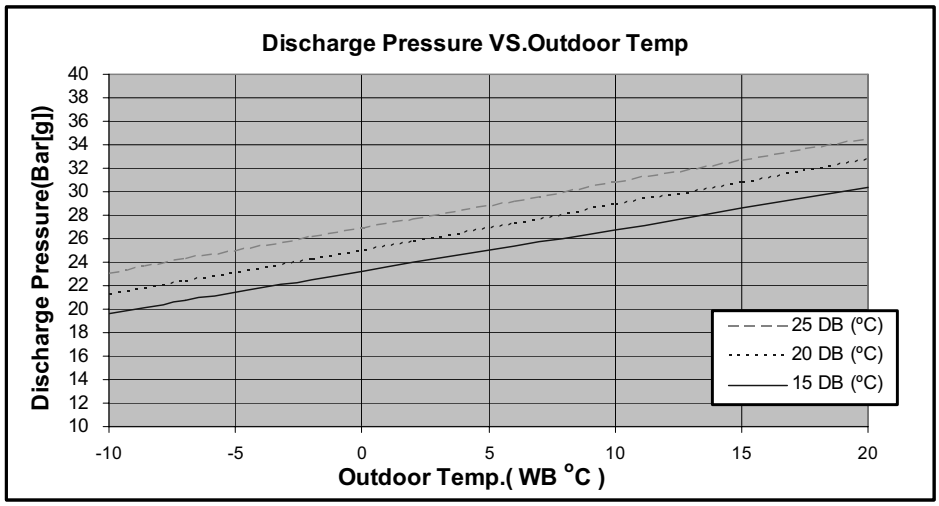
5.6.1 Cooling.





5.6.2 Heating.


Suction Pressure VS.Outdoor Temp
Suction Pressure(Bar[g])
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
-10
-5
0
5
10
15
20
Outdoor Temp.(WB °C)
15 DB (ºC)
20 DB (ºC)
25 DB (ºC)


Discharge Pressure VS.Outdoor Temp
Discharge Pressure(Bar[g])
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
-10
-5
0
5
10
15
20
Outdoor Temp.(WB °C)
25 DB (ºC)
20 DB (ºC)
15 DB (ºC)

5.7 SX 15 / ONG14 R410A

5.7.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING AIR DB OU COIL (°C)	DATA	ENTERING AIR WB/DB ID COIL (°C)				
		15/21	17/24	19/27	21/29	23/32
15(1)	TC	4.32	4.48	4.58	4.69	4.76
	SC	2.74	2.86	2.97	3.05	3.10
	PI	0.96	0.96	0.96	0.96	0.97
20(1)	TC	4.18	4.41	4.55	4.65	4.75
	SC	2.69	2.83	2.95	3.04	3.09
	PI	1.04	1.04	1.05	1.05	1.05
25	TC	3.96	4.27	4.49	4.63	4.74
	SC	2.62	2.78	2.93	3.01	3.07
	PI	1.12	1.13	1.14	1.15	1.15
30	TC	3.70	4.03	4.35	4.51	4.64
	SC	2.54	2.70	2.87	2.95	3.01
	PI	1.21	1.23	1.24	1.25	1.26
35	TC	3.43	3.72	4.10	4.31	4.51
	SC	2.41	2.59	2.80	2.88	2.94
	PI	1.31	1.33	1.35	1.36	1.37
40	TC	3.11	3.39	3.70	4.05	4.25
	SC	2.27	2.45	2.65	2.73	2.79
	PI	1.41	1.43	1.46	1.47	1.49
46	TC	2.70	2.95	3.25	3.59	3.87
	SC	2.09	2.24	2.42	2.50	2.56
	PI	1.54	1.56	1.60	1.62	1.64

LEGEND

TC – Total Cooling Capacity, kW
SC – Sensible Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

(1) Marked area is below standard operating limits. For operating in low ambient conditions, refer to Optional Accessories (Chapter 15).

5.7.2 Heating Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

	ENTERING AIR DB ID COIL (°C)					
	15		20		25	
ENTERING AIR WB OU COIL (°C)	TH	PI	TH	PI	TH	PI
-10	2.36	1.10	2.27	1.18	2.18	1.24
-7	2.54	1.13	2.45	1.19	2.36	1.26
-2	2.70	1.15	2.61	1.21	2.52	1.28
2	3.29	1.20	3.15	1.28	3.02	1.35
6	4.64	1.29	**4.50**	**1.38**	4.34	1.47
10	5.04	1.36	4.91	1.46	4.77	1.56
15	5.45	1.42	5.31	1.53	5.18	1.63
20	5.74	1.46	5.60	1.59	5.45	1.71

* the above chart includes the weighted deicing infleuence.

LEGEND

TH – Total Heating Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

5.8 Capacity Correction Factor Due to Tubing Length

5.8.1 Cooling

TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.02	**1**	0.984	0.946	---	---	---	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

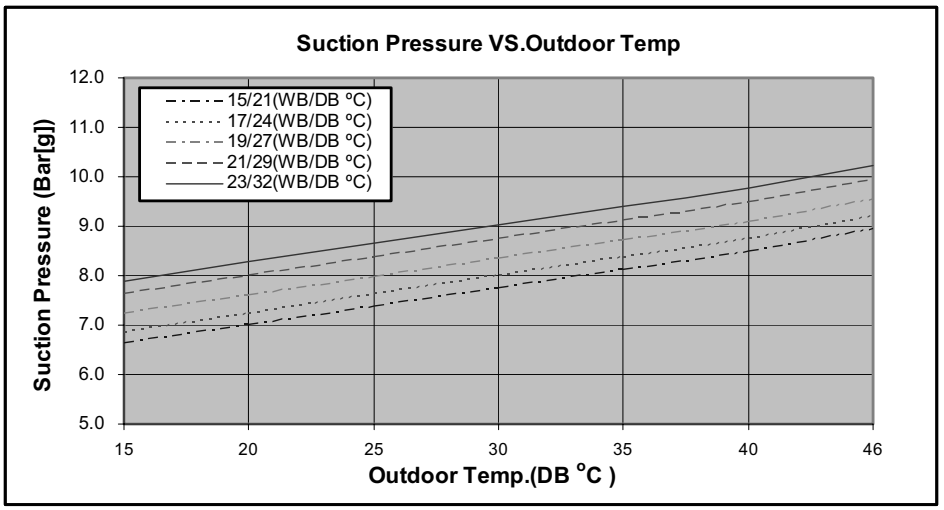
5.8.2 Heating

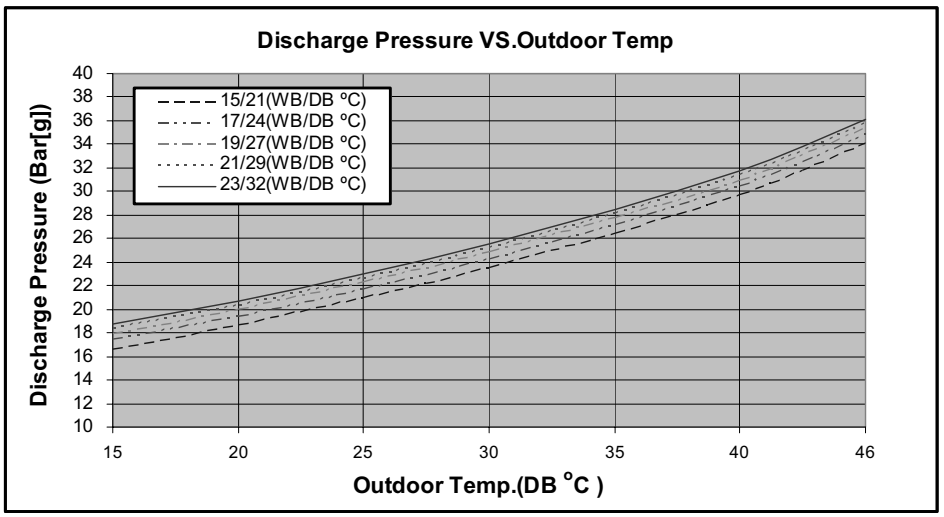
TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.04	**1**	0.995	0.971	---	---	---	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

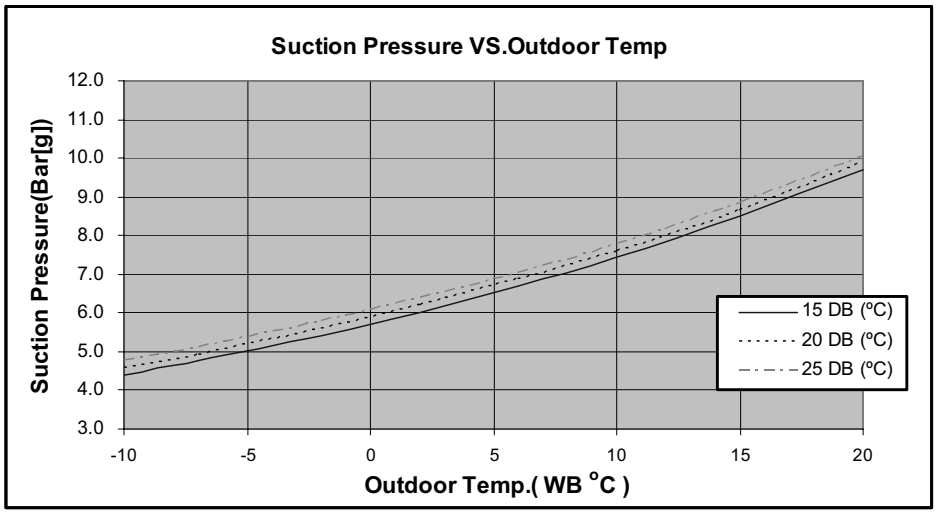
5.9 Pressure Curves.

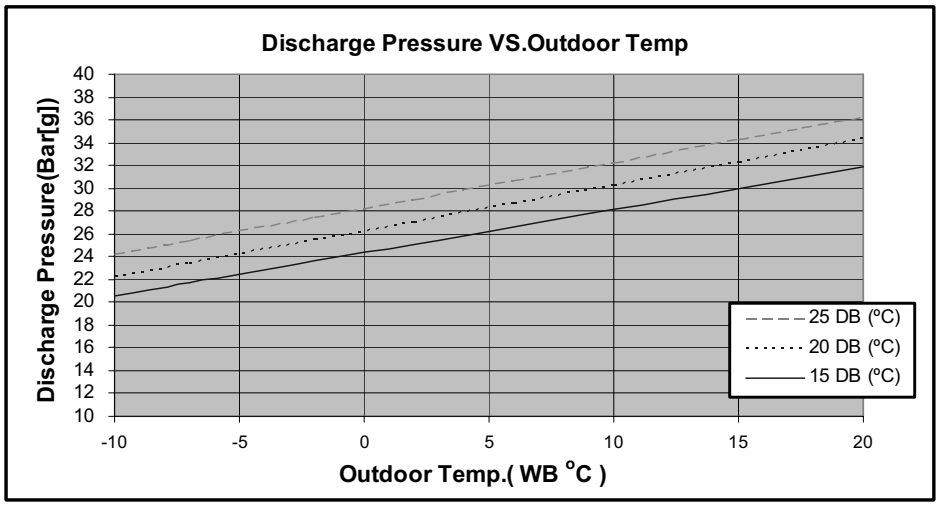
5.9.1 Cooling.





5.9.2 Heating.


Suction Pressure VS.Outdoor Temp
Suction Pressure(Bar[g])
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
-10
-5
0
5
10
15
20
Outdoor Temp.(WB °C)
15 DB (ºC)
20 DB (ºC)
25 DB (ºC)


Discharge Pressure VS.Outdoor Temp
Discharge Pressure(Bar[g])
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
-10
-5
0
5
10
15
20
Outdoor Temp.(WB °C)
25 DB (ºC)
20 DB (ºC)
15 DB (ºC)

5.10 SX 18 / GC18 R410A

5.10.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING AIR DB OU COIL (°C)	DATA	ENTERING AIR WB/DB ID COIL (°C)				
		15/21	17/24	19/27	21/29	23/32
15(1)	TC	5.80	6.00	6.15	6.29	6.39
	SC	3.94	4.11	4.27	4.37	4.45
	PI	1.29	1.29	1.30	1.30	1.31
20(1)	TC	5.61	5.91	6.10	6.24	6.38
	SC	3.86	4.07	4.24	4.36	4.44
	PI	1.40	1.41	1.41	1.42	1.42
25	TC	5.31	5.73	6.02	6.21	6.36
	SC	3.76	3.99	4.21	4.33	4.41
	PI	1.51	1.52	1.53	1.54	1.56
30	TC	4.96	5.40	5.84	6.05	6.22
	SC	3.64	3.87	4.11	4.24	4.32
	PI	1.63	1.66	1.67	1.68	1.70
35	TC	4.59	4.99	**5.50**	5.78	6.05
	SC	3.46	3.71	**4.02**	4.14	4.22
	PI	1.76	1.79	**1.82**	1.83	1.84
40	TC	4.18	4.55	4.96	5.43	5.71
	SC	3.26	3.51	3.80	3.92	4.00
	PI	1.90	1.93	1.96	1.99	2.01
46	TC	3.62	3.96	4.36	4.82	5.19
	SC	3.01	3.22	3.47	3.59	3.67
	PI	2.08	2.11	2.16	2.19	2.21

LEGEND

TC – Total Cooling Capacity, kW
SC – Sensible Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

(1) Marked area is below standard operating limits. For operating in low ambient conditions, refer to Optional Accessories (Chapter 15).

5.10.2 Heating Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

	ENTERING AIR DB ID COIL (°C)					
	15		20		25	
ENTERING AIR WB OU COIL (°C)	TH	PI	TH	PI	TH	PI
-10	3.02	1.42	2.90	1.51	2.79	1.58
-7	3.25	1.45	3.13	1.53	3.02	1.61
-2	3.45	1.47	3.34	1.56	3.22	1.65
2	4.20	1.54	4.03	1.64	3.85	1.73
6	5.92	1.65	**5.75**	**1.77**	5.55	1.88
10	6.44	1.75	6.27	1.87	6.10	2.00
15	6.96	1.82	6.79	1.96	6.61	2.09
20	7.33	1.88	7.16	2.04	6.96	2.19

* the above chart includes the weighted deicing infleuence.

LEGEND

TH – Total Heating Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

5.11 Capacity Correction Factor Due to Tubing Length

5.11.1 Cooling

TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.02	**1**	0.990	0.975	0.960	0.945	---	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

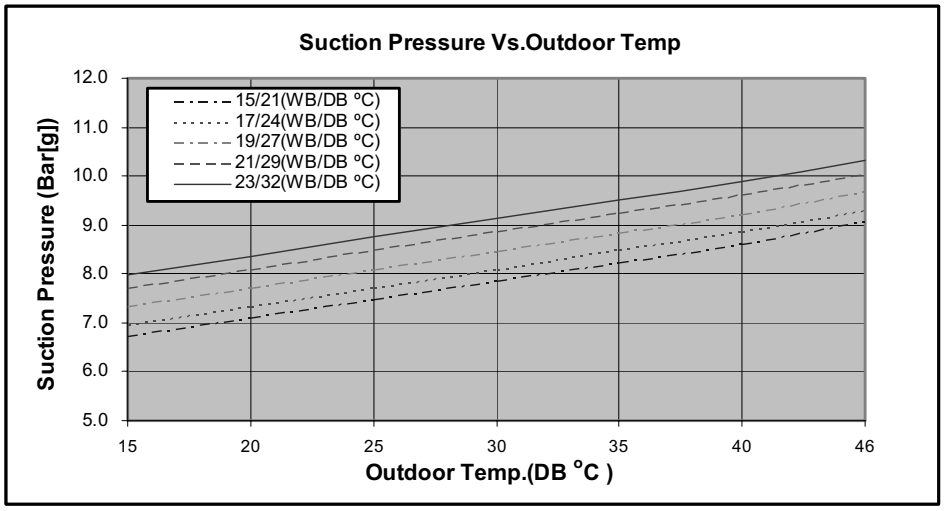
5.11.2 Heating

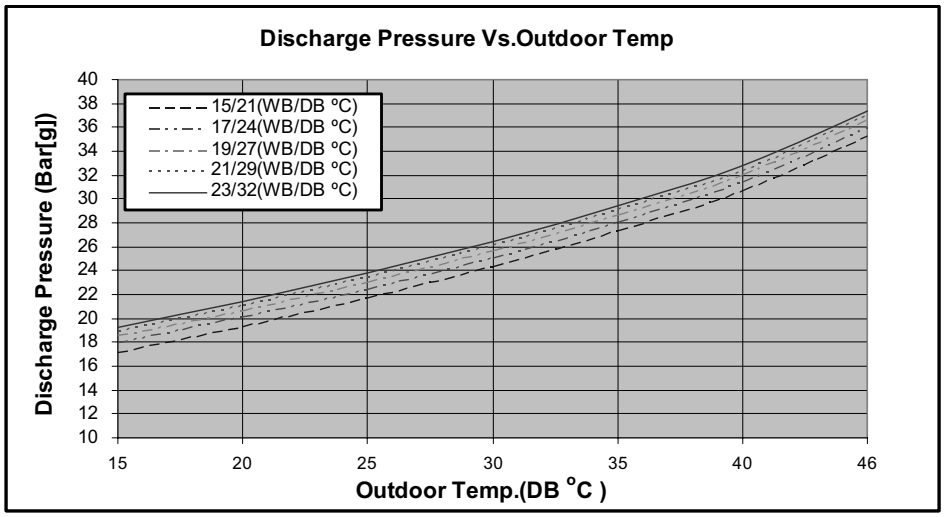
TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.03	**1**	1	0.997	0.992	0.988	---	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

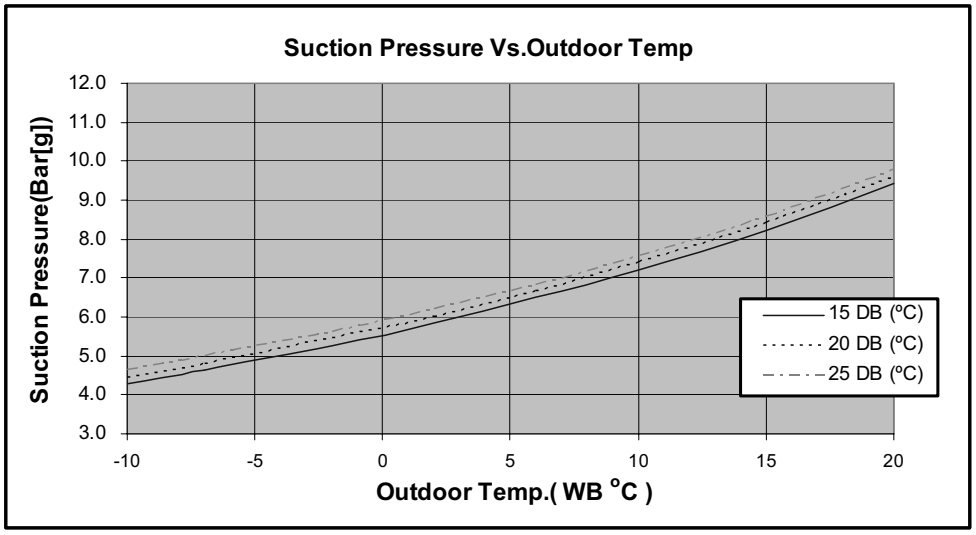
5.12 Pressure Curves.

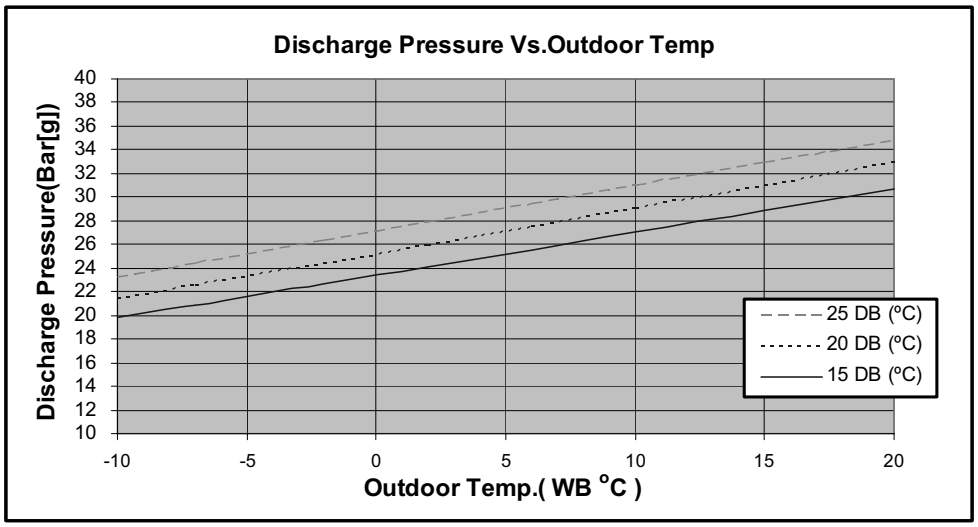
5.12.1 Cooling.





5.12.2 Heating.





5.13 SX 18 / GC18 3PH R410A

5.13.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING AIR DB OU COIL (°C)	DATA	ENTERING AIR WB/DB ID COIL (°C)				
		15/21	17/24	19/27	21/29	23/32
15(1)	TC	5.80	6.00	6.15	6.29	6.39
	SC	4.09	4.27	4.43	4.55	4.63
	PI	1.25	1.26	1.26	1.26	1.27
20(1)	TC	5.61	5.91	6.10	6.24	6.38
	SC	4.01	4.23	4.41	4.53	4.62
	PI	1.36	1.37	1.37	1.38	1.38
25	TC	5.31	5.73	6.02	6.21	6.36
	SC	3.91	4.15	4.37	4.50	4.58
	PI	1.47	1.48	1.49	1.50	1.51
30	TC	4.96	5.40	5.84	6.05	6.22
	SC	3.79	4.02	4.28	4.40	4.49
	PI	1.59	1.61	1.63	1.64	1.65
35	TC	4.59	4.99	**5.50**	5.78	6.05
	SC	3.60	3.86	**4.18**	4.30	4.38
	PI	1.71	1.74	**1.77**	1.78	1.79
40	TC	4.18	4.55	4.96	5.43	5.71
	SC	3.39	3.65	3.95	4.08	4.16
	PI	1.85	1.88	1.91	1.93	1.95
46	TC	3.62	3.96	4.36	4.82	5.19
	SC	3.13	3.35	3.61	3.73	3.81
	PI	2.02	2.05	2.10	2.13	2.15

LEGEND

TC – Total Cooling Capacity, kW
SC – Sensible Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

(1) Marked area is below standard operating limits. For operating in low ambient conditions, refer to Optional Accessories (Chapter 15).

5.13.2 Heating Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

	ENTERING AIR DB ID COIL (°C)					
	15		20		25	
ENTERING AIR WB OU COIL (°C)	TH	PI	TH	PI	TH	PI
-10	3.02	1.35	2.90	1.44	2.79	1.51
-7	3.25	1.39	3.13	1.46	3.02	1.54
-2	3.45	1.40	3.34	1.49	3.22	1.57
2	4.20	1.47	4.03	1.56	3.85	1.66
6	5.92	1.58	**5.75**	**1.69**	5.55	1.79
10	6.44	1.67	6.27	1.78	6.10	1.91
15	6.96	1.74	6.79	1.88	6.61	1.99
20	7.33	1.79	7.16	1.94	6.96	2.10

* the above chart includes the weighted deicing infleuence.

LEGEND

TH – Total Heating Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

5.14 Capacity Correction Factor Due to Tubing Length

5.14.1 Cooling

TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.02	**1**	0.990	0.975	0.960	0.945	---	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

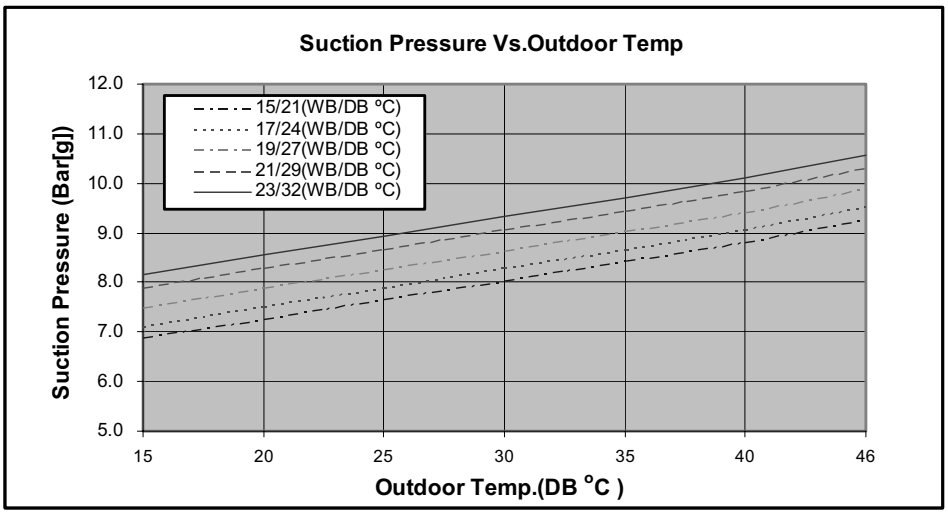
5.14.2 Heating

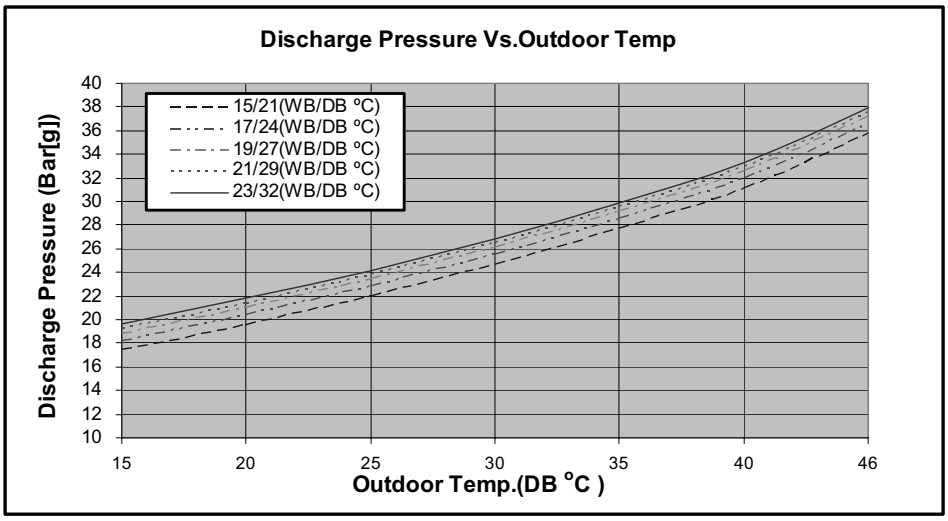
TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.03	**1**	1	0.997	0.992	0.988	---	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

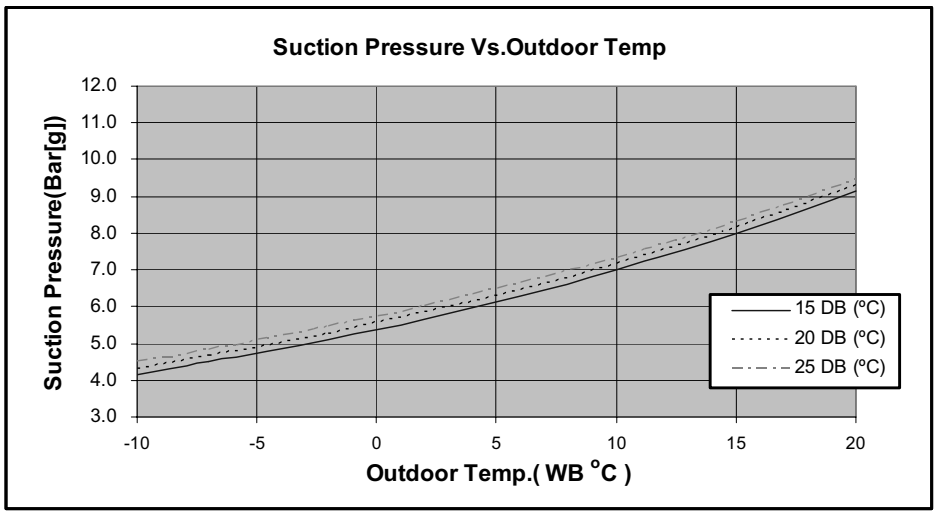
5.15 Pressure Curves.

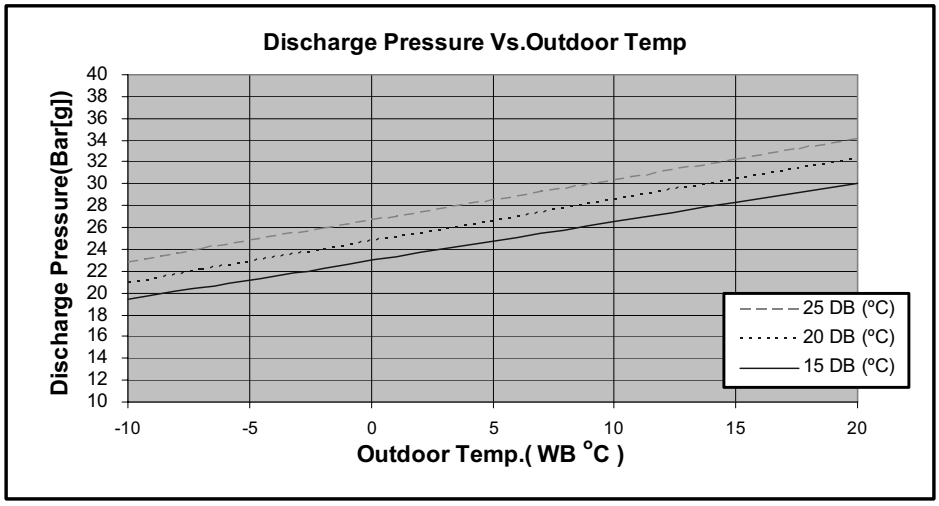
5.15.1 Cooling.





5.15.2 Heating.





5.16 SX 24 / OU7-24, OU7-24Z & OU7-24T R410A

5.16.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING AIR DB OU COIL (°C)	DATA	ENTERING AIR WB/DB ID COIL (°C)				
		15/21	17/24	19/27	21/29	23/32
15(1)	TC	7.20	7.46	7.63	7.81	7.93
	SC	5.02	5.24	5.44	5.58	5.68
	PI	1.61	1.61	1.62	1.62	1.63
20(1)	TC	6.97	7.34	7.57	7.75	7.92
	SC	4.92	5.19	5.41	5.56	5.67
	PI	1.75	1.75	1.76	1.77	1.77
25	TC	6.59	7.12	7.48	7.71	7.89
	SC	4.80	5.09	5.37	5.52	5.63
	PI	1.89	1.90	1.91	1.93	1.94
30	TC	6.16	6.71	7.25	7.51	7.73
	SC	4.65	4.94	5.25	5.40	5.51
	PI	2.04	2.07	2.08	2.10	2.12
35	TC	5.71	6.19	**6.83**	7.17	7.51
	SC	4.42	4.74	**5.13**	5.28	5.38
	PI	2.20	2.23	**2.27**	2.29	2.30
40	TC	5.19	5.65	6.16	6.74	7.09
	SC	4.16	4.48	4.85	5.01	5.11
	PI	2.37	2.41	2.45	2.48	2.50
46	TC	4.50	4.92	5.41	5.98	6.44
	SC	3.84	4.11	4.43	4.58	4.68
	PI	2.59	2.63	2.69	2.73	2.76

LEGEND

TC – Total Cooling Capacity, kW
SC – Sensible Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

(1) Marked area is below standard operating limits. For operating in low ambient conditions, refer to Optional Accessories (Chapter 15).

5.16.2 Heating Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

	ENTERING AIR DB ID COIL (°C)					
	15		20		25	
ENTERING AIR WB OU COIL (°C)	TH	PI	TH	PI	TH	PI
-10	4.06	1.70	3.91	1.81	3.75	6.29
-7	4.37	1.75	4.21	1.84	4.06	6.41
-2	4.64	1.77	4.49	1.87	4.33	6.54
2	5.65	1.85	5.41	1.97	5.18	6.89
6	7.24	1.99	**7.03**	**2.13**	6.78	7.47
10	7.87	2.10	7.66	2.25	7.45	7.93
15	8.51	2.19	8.30	2.36	8.08	8.30
20	8.96	2.26	8.75	2.45	8.51	8.72

* the above chart includes the weighted deicing infleuence.

LEGEND

TH – Total Heating Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

5.17 Capacity Correction Factor Due to Tubing Length

5.17.1 Cooling

TOTAL TUBING LENGTH								
4m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.01	**1**	0.98	0.97	0.96	0.95	0.94	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

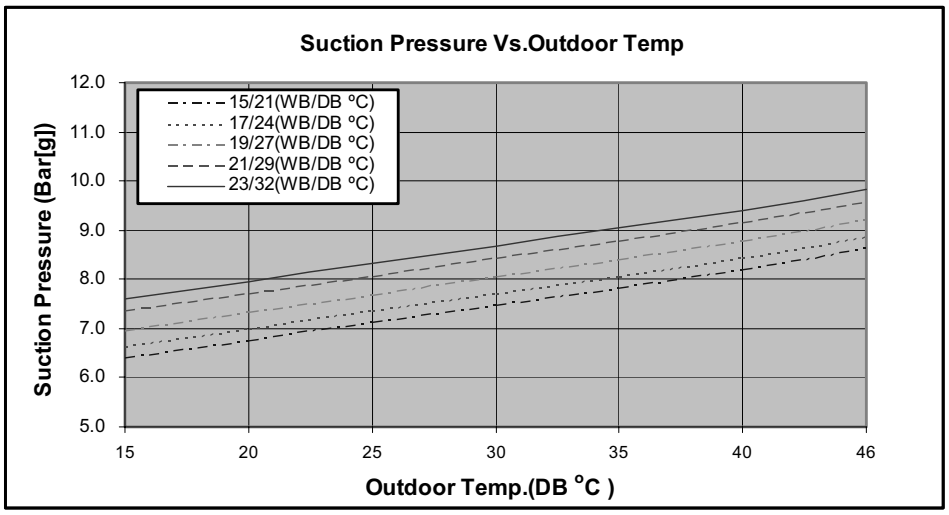
5.17.2 Heating

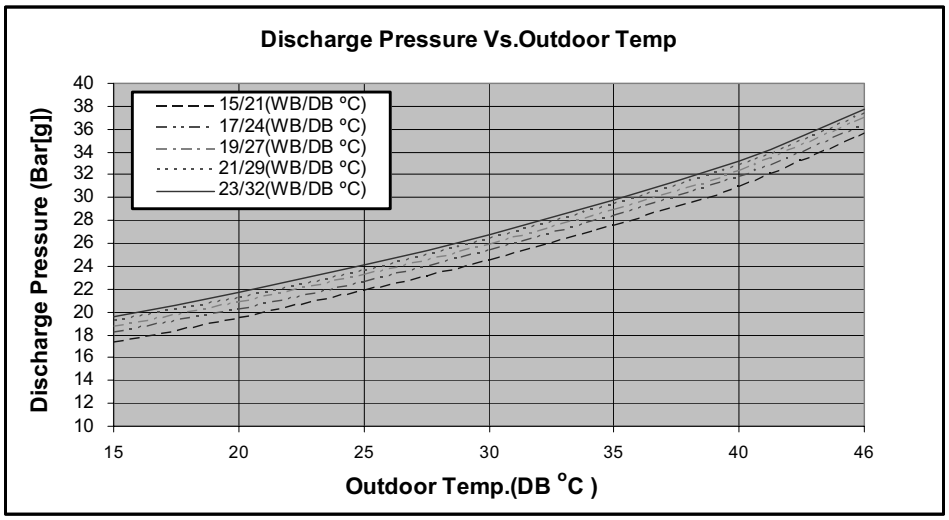
TOTAL TUBING LENGTH								
4m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.02	**1**	0.99	0.99	0.98	0.97	0.97	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

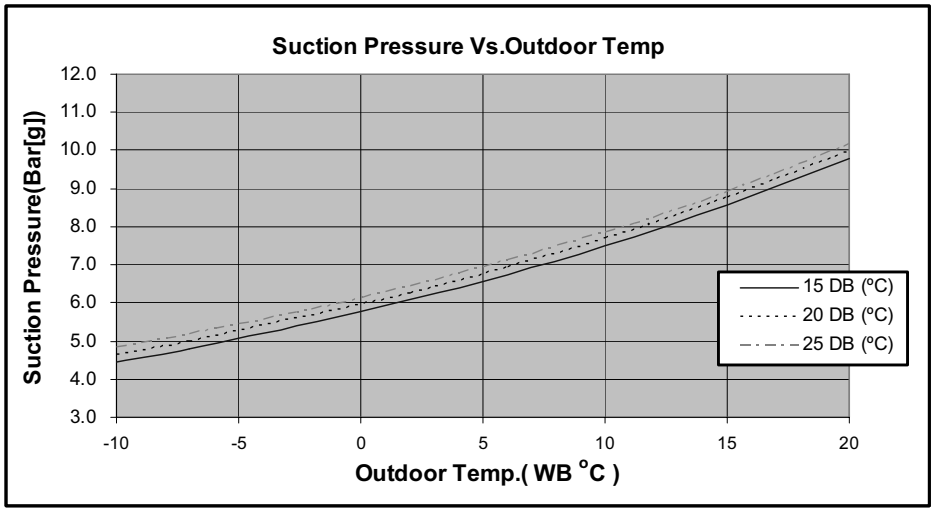
5.18 Pressure Curves.

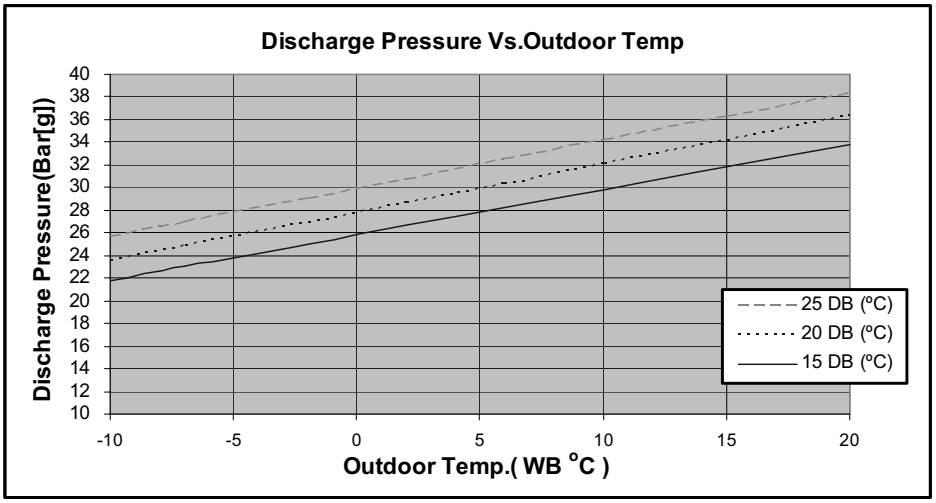
5.18.1 Cooling.





5.18.2 Heating.





5.19 SX 30 / OU8- 30 R410A

5.19.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING AIR DB OU COIL (°C)	DATA	ENTERING AIR WB/DB ID COIL (°C)				
		15/21	17/24	19/27	21/29	23/32
15(1)	TC	8.98	9.30	9.52	9.75	9.89
	SC	5.68	5.92	6.15	6.31	6.42
	PI	2.12	2.12	2.13	2.13	2.14
20(1)	TC	8.69	9.16	9.45	9.67	9.88
	SC	5.57	5.87	6.12	6.29	6.41
	PI	2.30	2.31	2.32	2.33	2.33
25	TC	8.22	8.88	9.33	9.61	9.85
	SC	5.42	5.76	6.07	6.24	6.36
	PI	2.49	2.50	2.52	2.54	2.55
30	TC	7.69	8.37	9.04	9.36	9.64
	SC	5.25	5.58	5.94	6.11	6.23
	PI	2.68	2.72	2.75	2.77	2.79
35	TC	7.12	7.72	**8.52**	8.95	9.37
	SC	5.00	5.36	**5.80**	5.97	6.08
	PI	2.89	2.94	**2.99**	3.01	3.03
40	TC	6.47	7.05	7.69	8.41	8.84
	SC	4.71	5.07	5.49	5.66	5.78
	PI	3.12	3.17	3.22	3.26	3.30
46	TC	5.62	6.14	6.75	7.46	8.04
	SC	4.34	4.65	5.00	5.18	5.29
	PI	3.41	3.46	3.54	3.59	3.63

LEGEND

TC – Total Cooling Capacity, kW
SC – Sensible Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

(1) Marked area is below standard operating limits. For operating in low ambient conditions, refer to Optional Accessories (Chapter 15).

5.19.2 Heating Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

	ENTERING AIR DB ID COIL (°C)					
	15		20		25	
ENTERING AIR WB OU COIL (°C)	TH	PI	TH	PI	TH	PI
-10	5.00	2.23	4.81	2.38	4.61	2.50
-7	5.38	2.29	5.19	2.41	5.00	2.54
-2	5.71	2.32	5.52	2.46	5.33	2.59
2	6.95	2.43	6.66	2.58	6.38	2.73
6	8.91	2.61	**8.65**	**2.79**	8.35	2.96
10	9.69	2.75	9.43	2.94	9.17	3.15
15	10.47	2.87	10.21	3.10	9.95	3.29
20	11.03	2.96	10.77	3.21	10.47	3.46

* the above chart includes the weighted deicing infleuence.

LEGEND

TH – Total Heating Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

5.20 Capacity Correction Factor Due to Tubing Length

5.20.1 Cooling

TOTAL TUBING LENGTH								
4m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.01	**1**	0.98	0.97	0.96	0.95	0.94	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

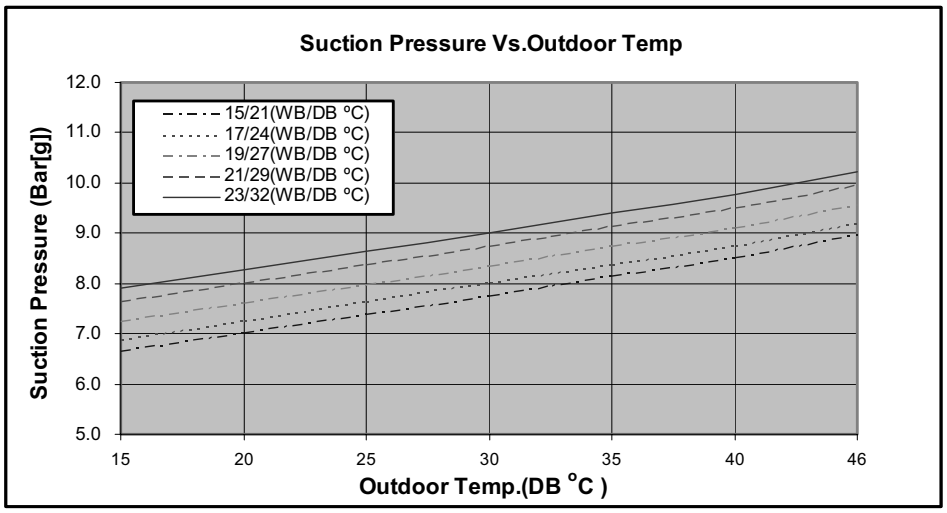
5.20.2 Heating

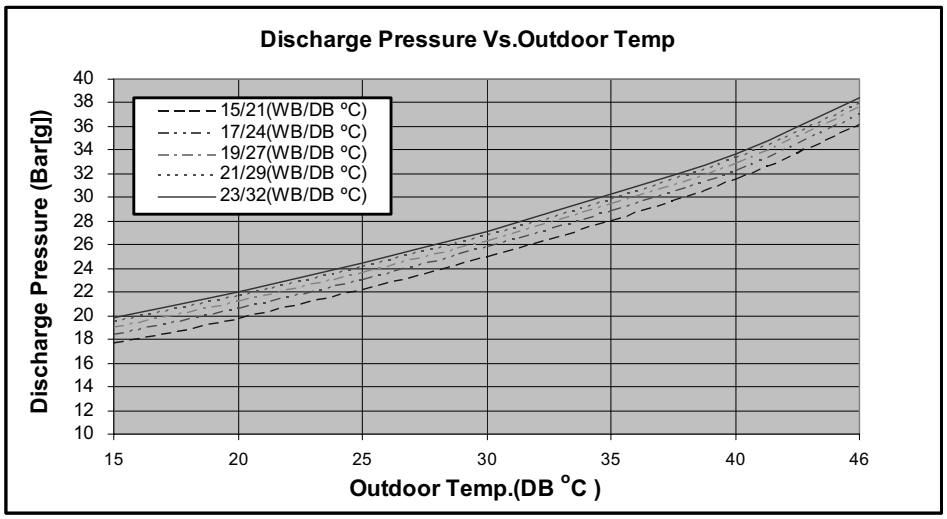
TOTAL TUBING LENGTH								
4m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.02	**1**	0.99	0.99	0.98	0.97	0.97	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

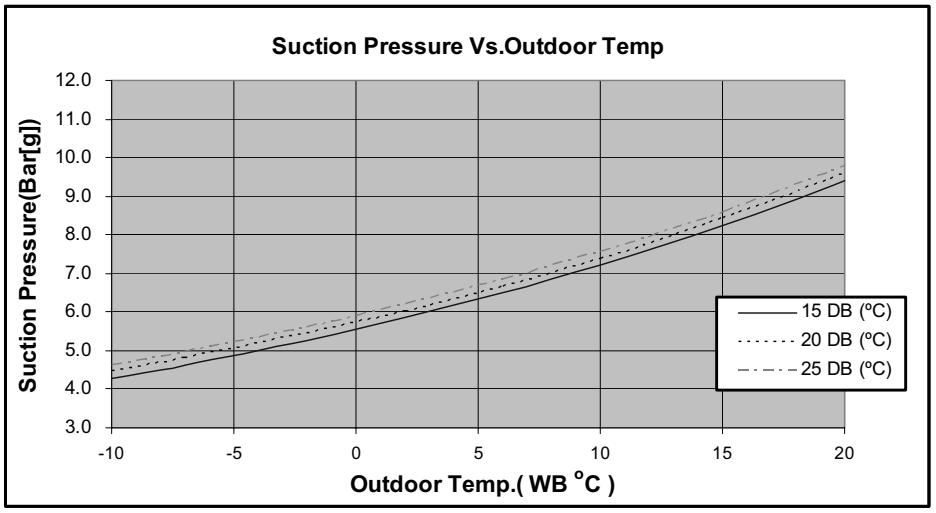
5.21 Pressure Curves.

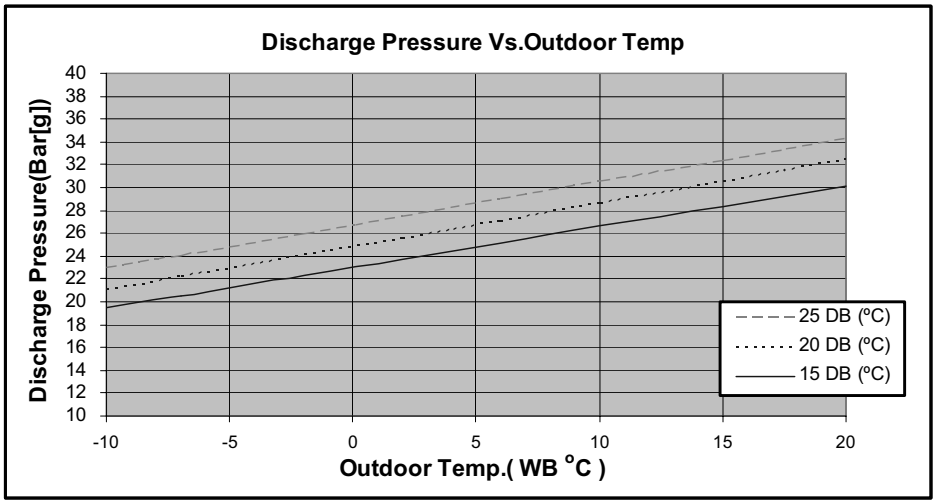
5.21.1 Cooling.





5.21.2 Heating.





5.22 SX 30 / OU8- 30T R410A

5.22.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING AIR DB OU COIL (°C)	DATA	ENTERING AIR WB/DB ID COIL (°C)				
		15/21	17/24	19/27	21/29	23/32
15(1)	TC	8.75	9.06	9.27	9.49	9.64
	SC	5.53	5.77	5.99	6.14	6.26
	PI	1.96	1.97	1.97	1.98	1.99
20(1)	TC	8.46	8.92	9.20	9.42	9.62
	SC	5.42	5.72	5.96	6.13	6.24
	PI	2.13	2.14	2.15	2.16	2.16
25	TC	8.01	8.65	9.09	9.37	9.59
	SC	5.28	5.61	5.91	6.08	6.20
	PI	2.30	2.32	2.34	2.35	2.37
30	TC	7.49	8.15	8.81	9.12	9.39
	SC	5.12	5.44	5.78	5.95	6.07
	PI	2.49	2.52	2.54	2.56	2.59
35	TC	6.93	7.52	**8.30**	8.72	9.13
	SC	4.87	5.22	**5.65**	5.81	5.93
	PI	2.68	2.73	**2.77**	2.79	2.81
40	TC	6.31	6.86	7.49	8.19	8.61
	SC	4.59	4.94	5.34	5.51	5.63
	PI	2.89	2.94	2.99	3.02	3.05
46	TC	5.47	5.98	6.58	7.27	7.83
	SC	4.23	4.53	4.87	5.04	5.16
	PI	3.16	3.21	3.28	3.33	3.36

LEGEND

TC – Total Cooling Capacity, kW
SC – Sensible Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

(1) Marked area is below standard operating limits. For operating in low ambient conditions, refer to Optional Accessories (Chapter 15).

5.22.2 Heating Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

	ENTERING AIR DB ID COIL (°C)					
	15		20		25	
ENTERING AIR WB OU COIL (°C)	TH	PI	TH	PI	TH	PI
-10	4.79	2.10	4.61	2.24	4.43	2.35
-7	5.16	2.16	4.98	2.27	4.79	2.40
-2	5.48	2.18	5.30	2.31	5.11	2.45
2	6.66	2.29	6.39	2.43	6.12	2.58
6	8.55	2.46	**8.30**	**2.63**	8.01	2.79
10	9.30	2.60	9.05	2.77	8.80	2.97
15	10.04	2.71	9.79	2.92	9.55	3.10
20	10.58	2.79	10.33	3.02	10.04	3.26

* the above chart includes the weighted deicing infleuence.

LEGEND

TH – Total Heating Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OU – Outdoor

5.23 Capacity Correction Factor Due to Tubing Length

5.23.1 Cooling

TOTAL TUBING LENGTH								
4m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.01	**1**	0.98	0.97	0.96	0.95	0.94	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

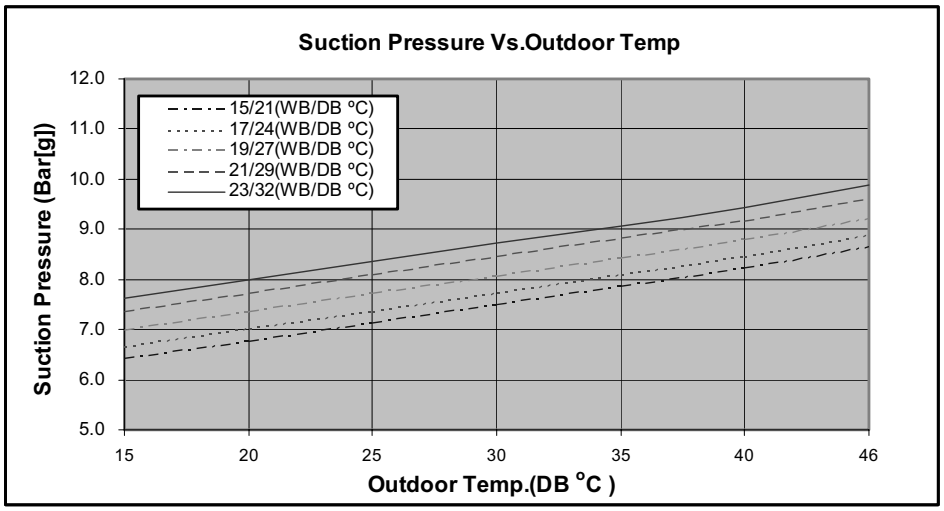
5.23.2 Heating

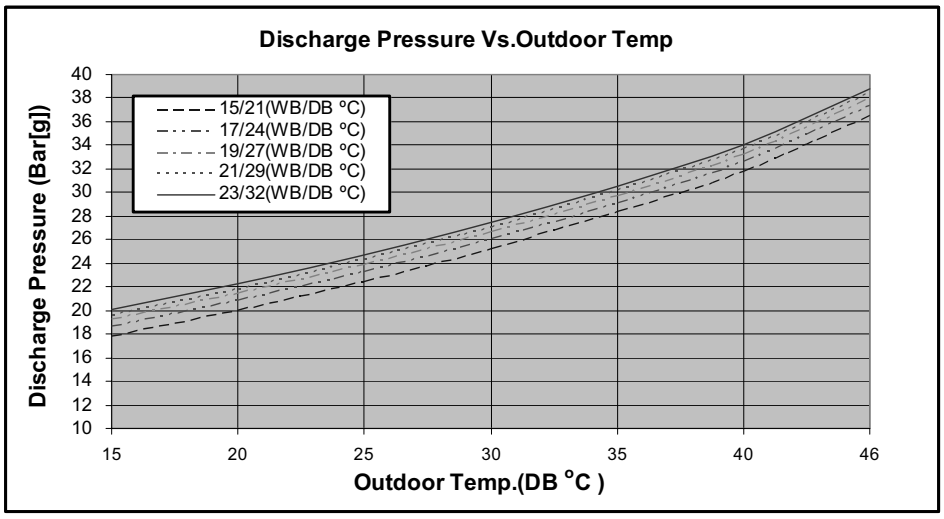
TOTAL TUBING LENGTH								
4m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.02	**1**	0.99	0.99	0.98	0.97	0.97	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

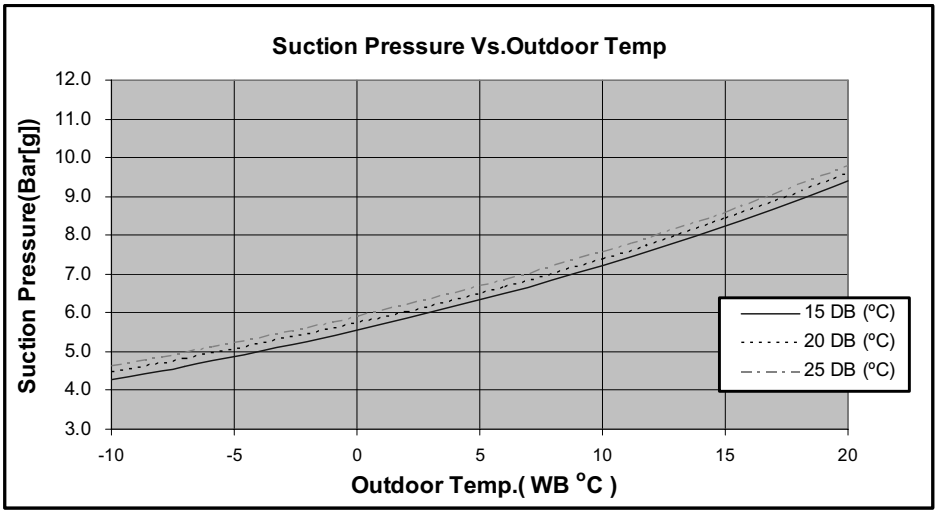
5.24 Pressure Curves.

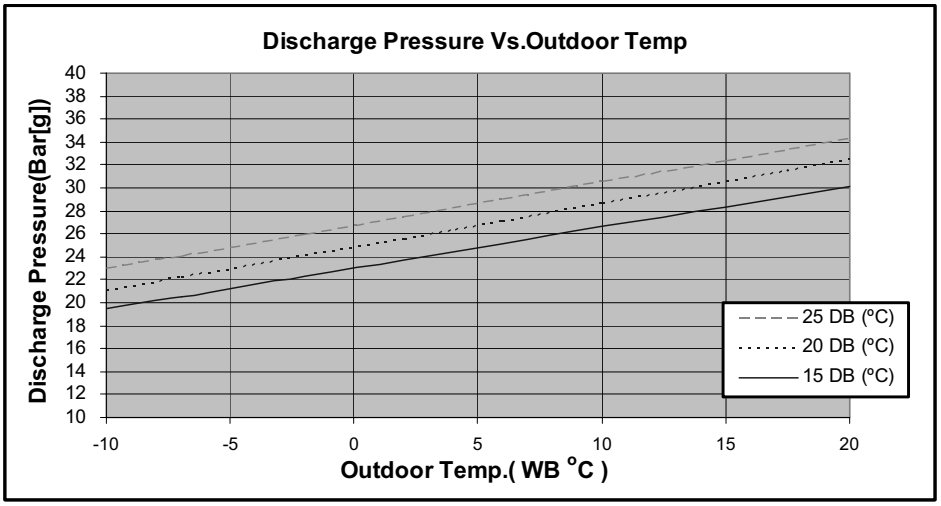
5.24.1 Cooling.





5.24.2 Heating.





6. ELECTRICAL DATA

6.1 Single Phase Units

MODEL	SX 9	SX 12	SX 15	SX 18	
Power Supply	To indoor	To indoor	To indoor	To Indoor	To outdoor
	1PH-230V-50Hz	1PH-230V-50Hz	1PH-230V-50Hz	1PH-230V-50Hz	
Max Current, A	7.1	7.6	10.4	12	
Circuit Breaker	10	16	16	16	
Power Supply Wiring No. X Cross Section mm^2	3x1.5 mm^2	3x1.5 mm^2	3x1.5 mm^2	3x2.5 mm^2	
Interconnecting Cable RC Model No. X Cross Section mm^2	5x1.5 mm^2 +2x0.5 mm^2 (OCT sensor)	5x1.5 mm^2 +2x0.5 mm^2 (OCT sensor)	5x1.5 mm^2 +2x0.5 mm^2 (OCT sensor)	5x2.5 mm^2 +2x0.5 mm^2 (OCT sensor)	6x1.5 mm^2 +2x0.5 mm^2 (OCT sensor)
Interconnecting Cable ST Model No. X Cross Section mm^2	4x1.5 mm^2	4x1.5 mm^2	4x1.5 mm^2	4x2.5 mm	5x2.5 mm

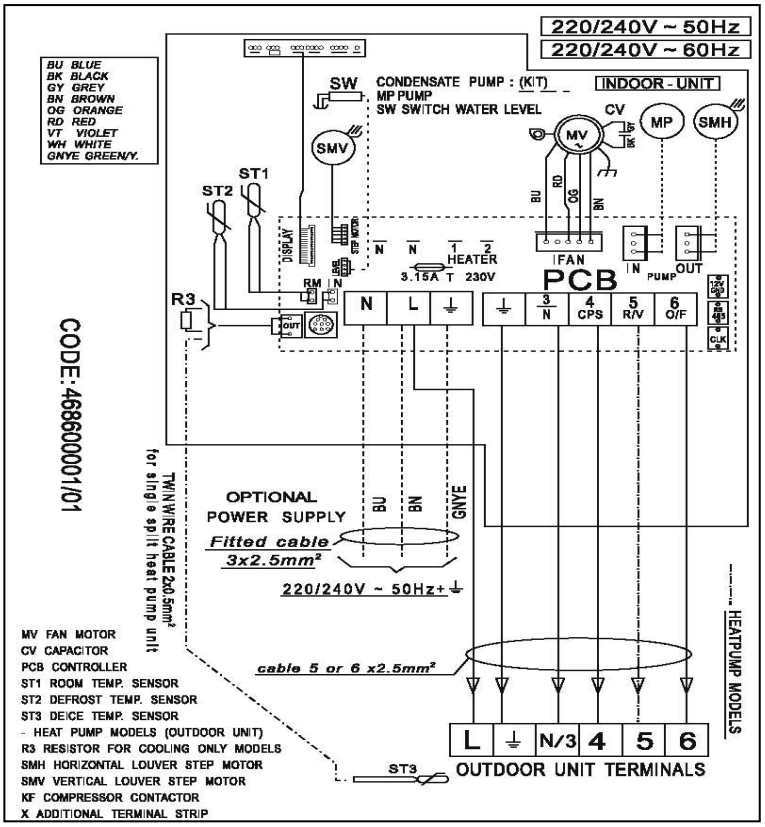
MODEL	SX 24	SX 30
Power Supply	To Outdoor	To outdoor
	1PH-230V-50Hz	1PH – 230V – 50 Hz
Max Current, A	15	17
Circuit Breaker	20	25
Power Supply Wiring No. X Cross Section mm^2	3 x 2.5 mm^2	3 x 4 mm^2
Interconnecting Cable RC Model No. X Cross Section mm^2	6 x 1.5 mm^2 + 2 X 0.5 mm^2 (OCT Sensor)	6 x1.5 mm^2 +2 x 0.5 mm^2 (OCT sensor)
Interconnecting Cable ST Model No. X Cross Section mm^2	5 x 1.5 mm^2 + 2 X 0.5 mm^2 (OCT Sensor)	5 x1.5 mm^2 (OCT Sensor)

6.2 Three Phase Units

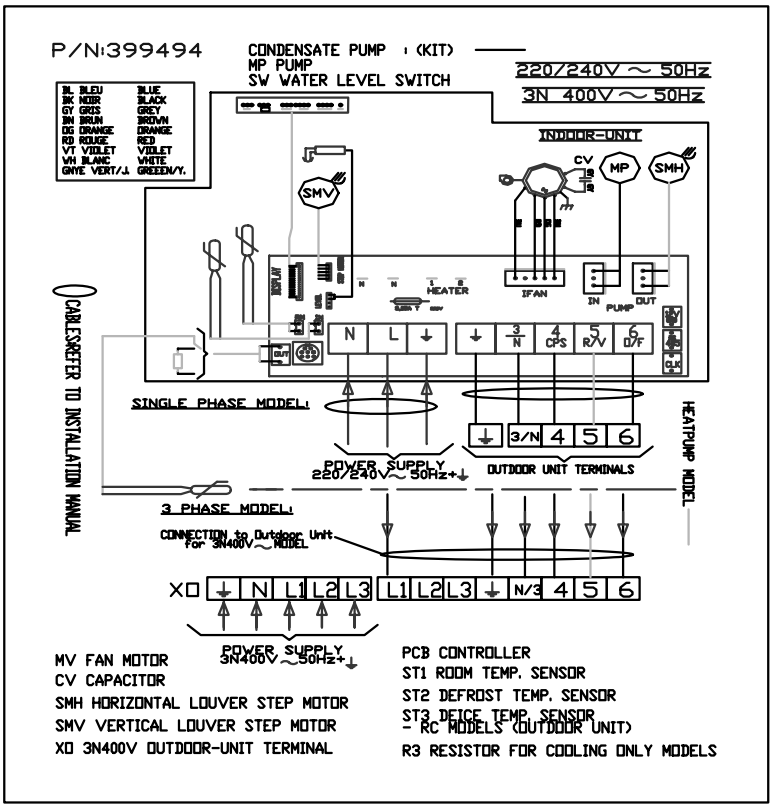
MODEL	SX 18T	SX 24T	SX 30T
Power Supply	To outdoor	To outdoor	To Outdoor
	3PH-400V-50Hz	3PH – 400V – 50 Hz	3PH – 400V – 50 Hz
Max Current, A	4.2	3 x 7.5	3 x 9.2
Circuit Breaker	6	3 x 10	3 x 16
Power Supply Wiring No. X Cross Section mm^2	5x1.5mm^2	5 x 1.5 mm^2	5 X 2.5 mm^2
Interconnecting Cable RC Model No. X Cross Section mm^2	6x1.5 mm^2 +2x0.5 mm^2 (OCT senser)	6 X 1.5 mm^2 + 2 X 0.5 mm^2 (OCT Sensor)	6 X 1.5 mm^2 + 2 X 0.5 mm^2 (OCT Sensor)
Interconnecting Cable ST Model No. X Cross Section mm^2	5x1.5 mm^2	5 X 1.5 mm^2 + 2 X 0.5 mm^2 (OCT Sensor)	5 X 1.5 mm^2 + 2 X 0.5 mm^2 (OCT Sensor)

7. WIRING DIAGRAMS

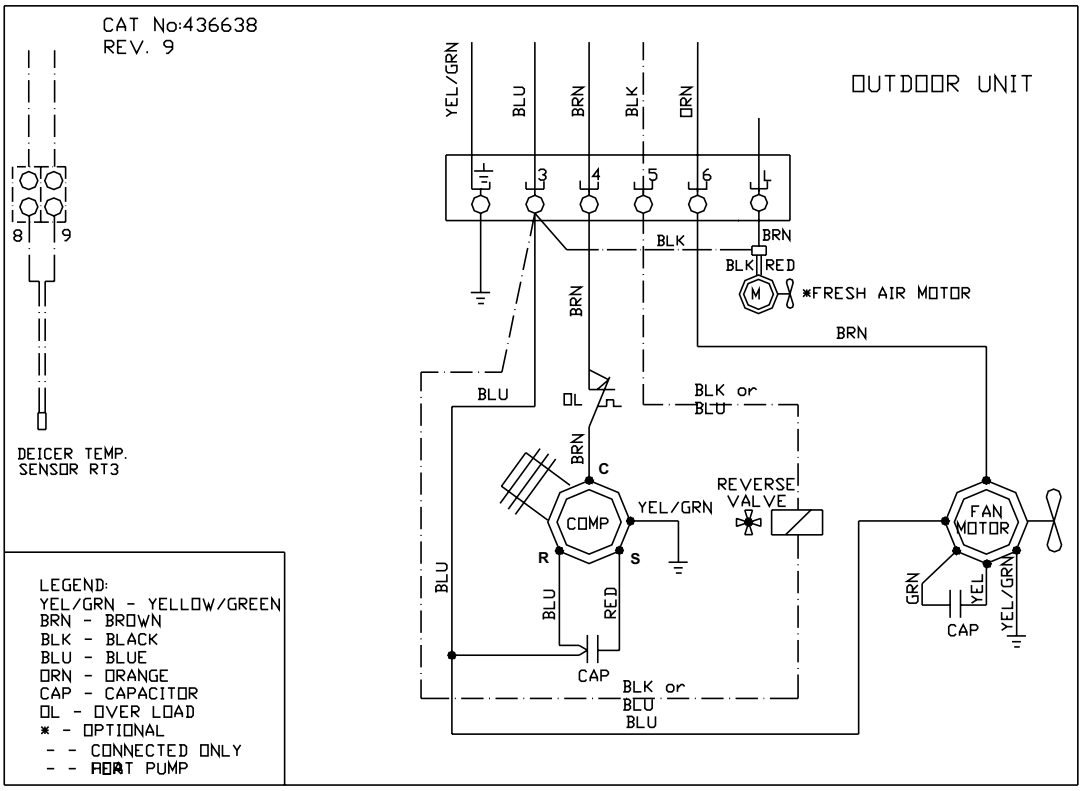
7.1 Indoor Unit: SX 9, 12, 15



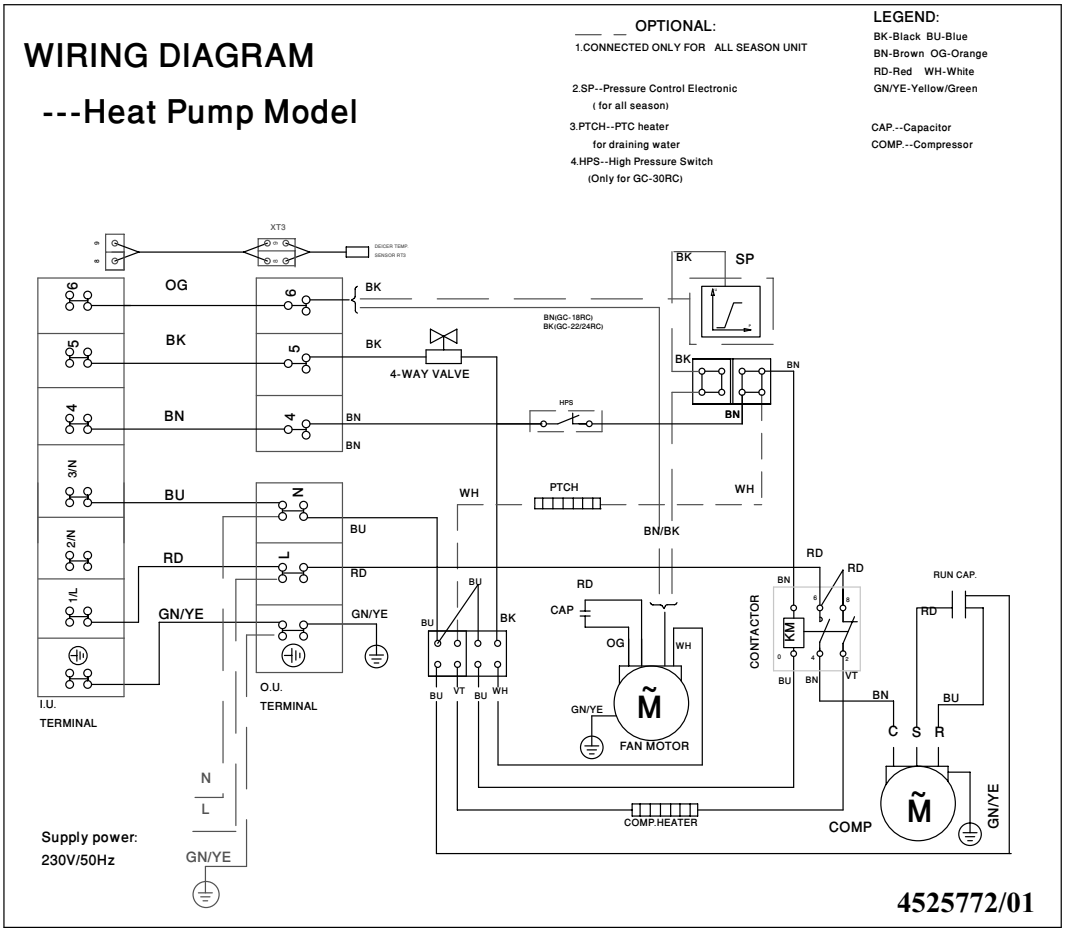
7.2 Indoor Unit: SX 18, 24, 30 1PH/3PH



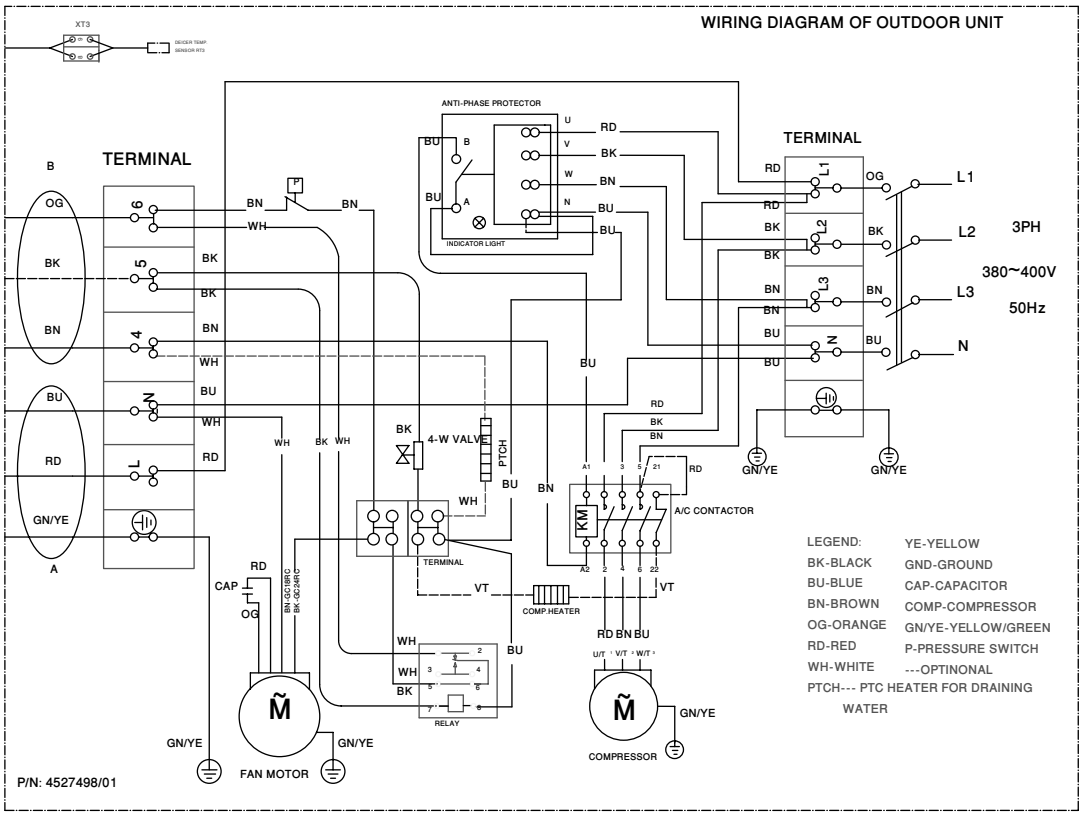
7.3 Outdoor Unit: ONG 9, 12, 15



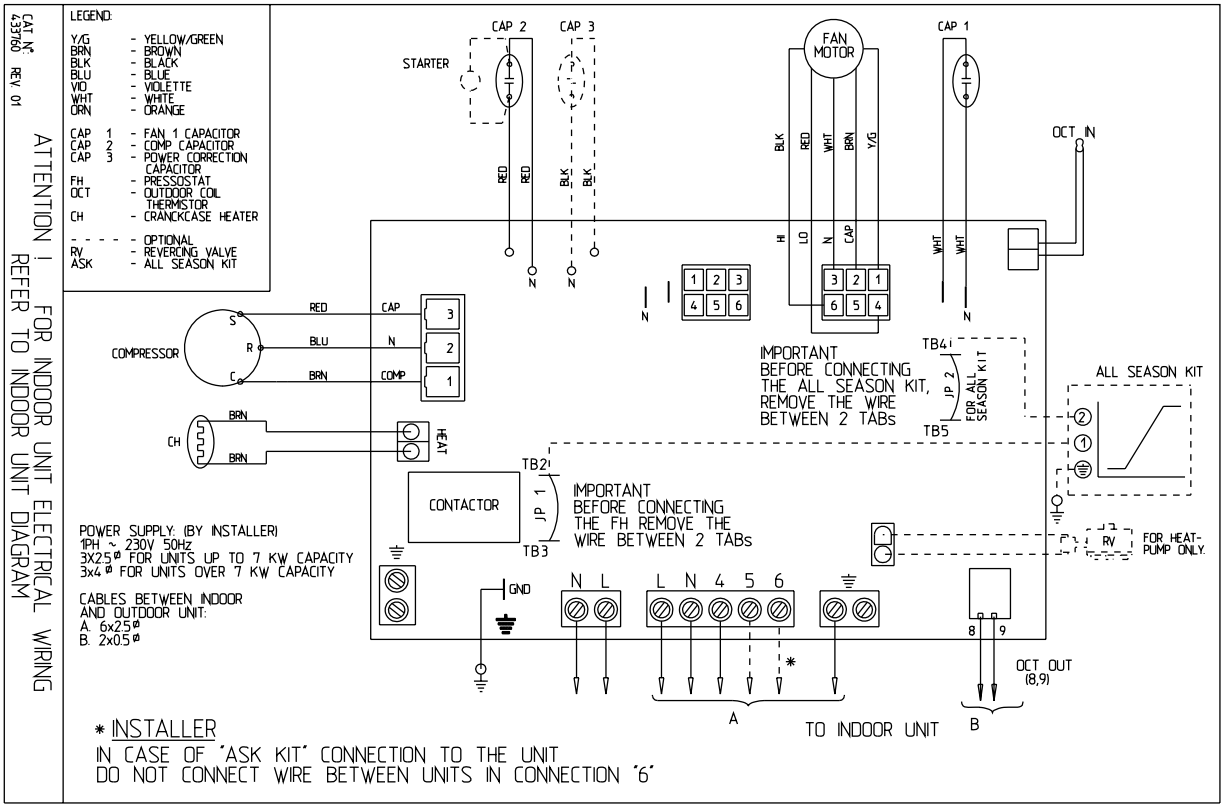
7.4 Outdoor Unit: GC 18



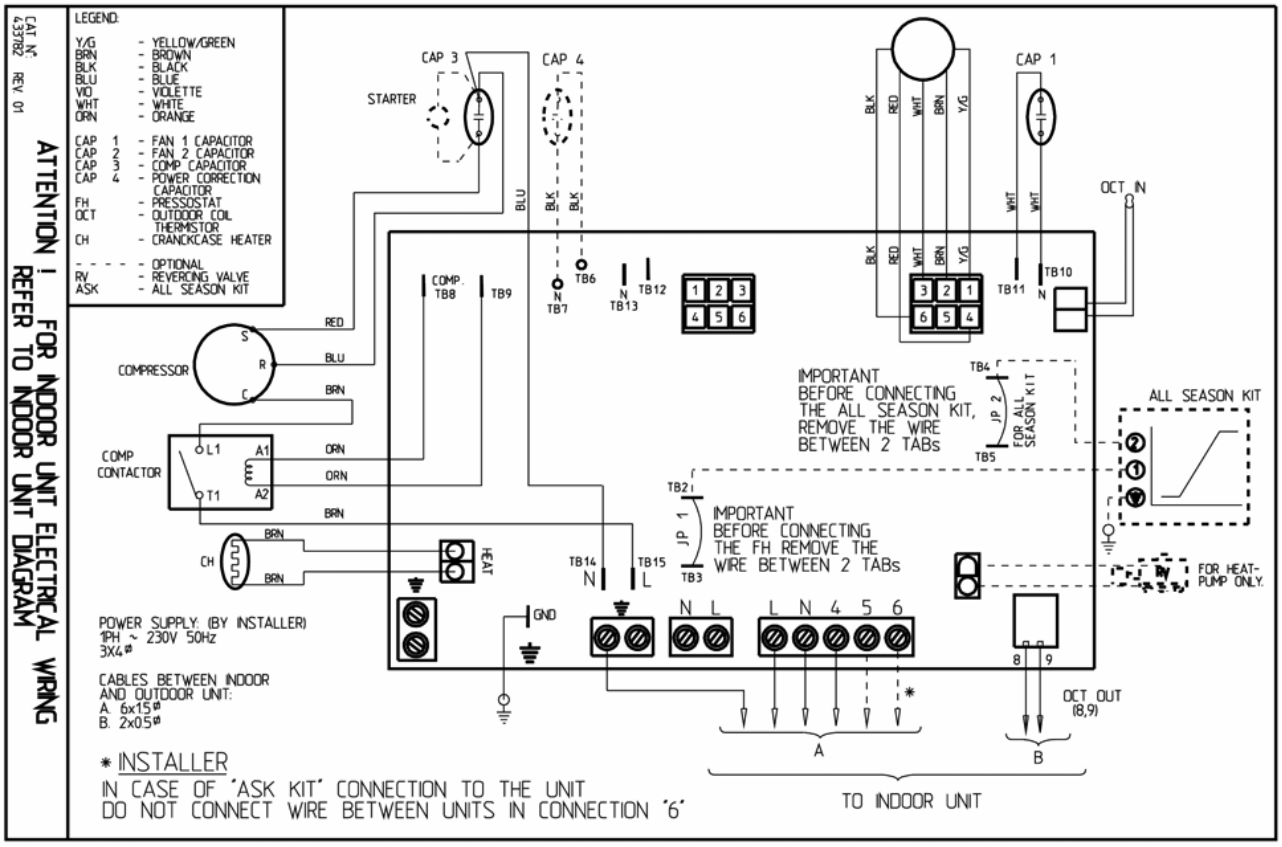
7.5 Outdoor Unit: GC 18 3PH



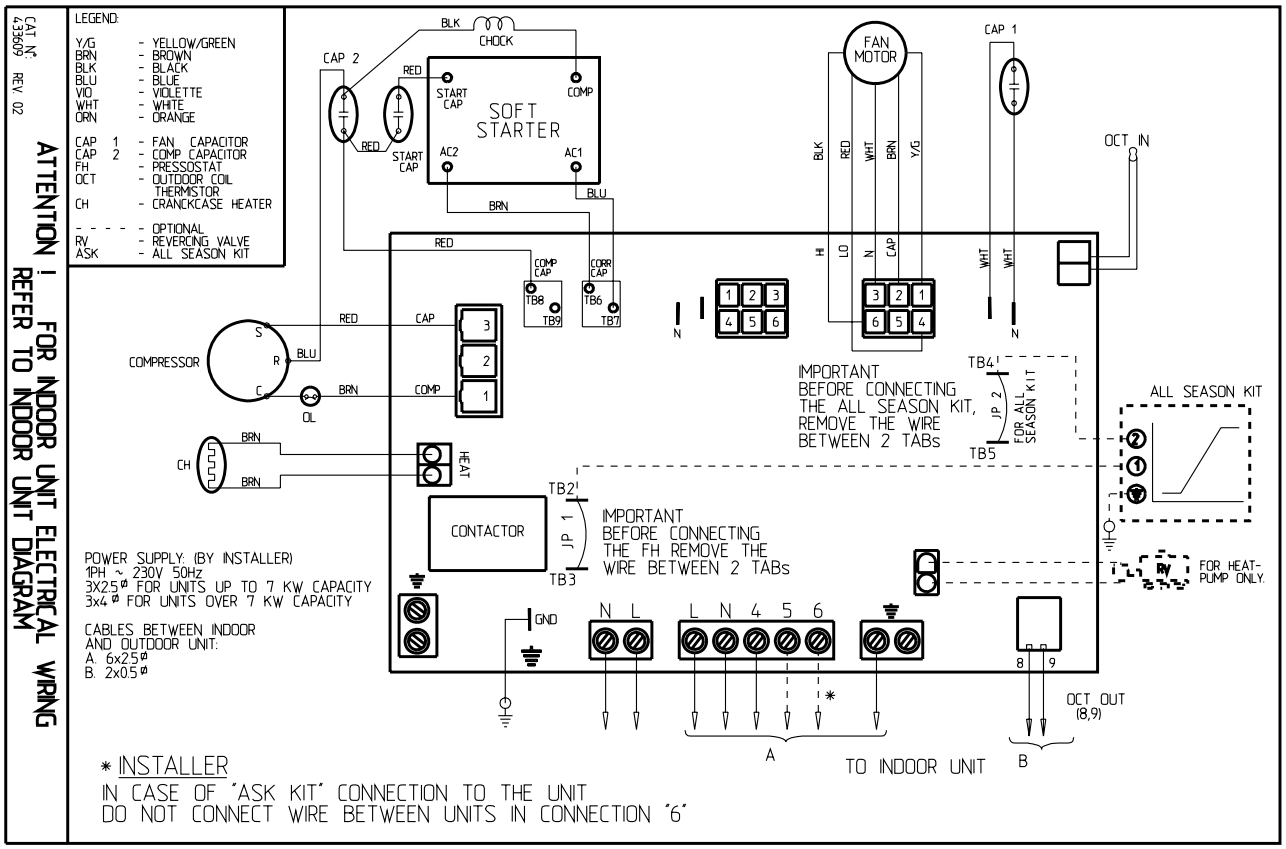
7.6 Outdoor Unit: OU7-24 / OU8-30 1PH



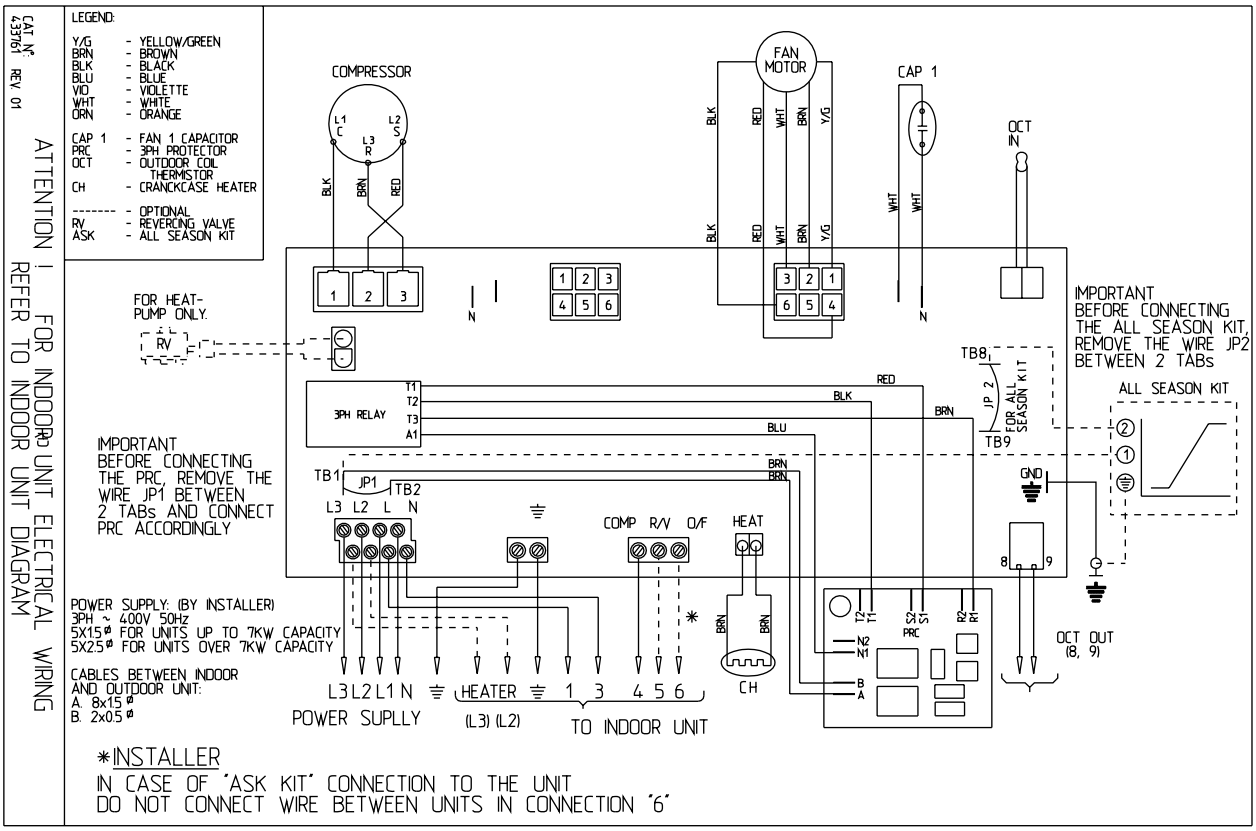
7.7 Outdoor Unit: OU7-24Z



7.8 Outdoor Unit: OU8-30 1PH (with soft starter)

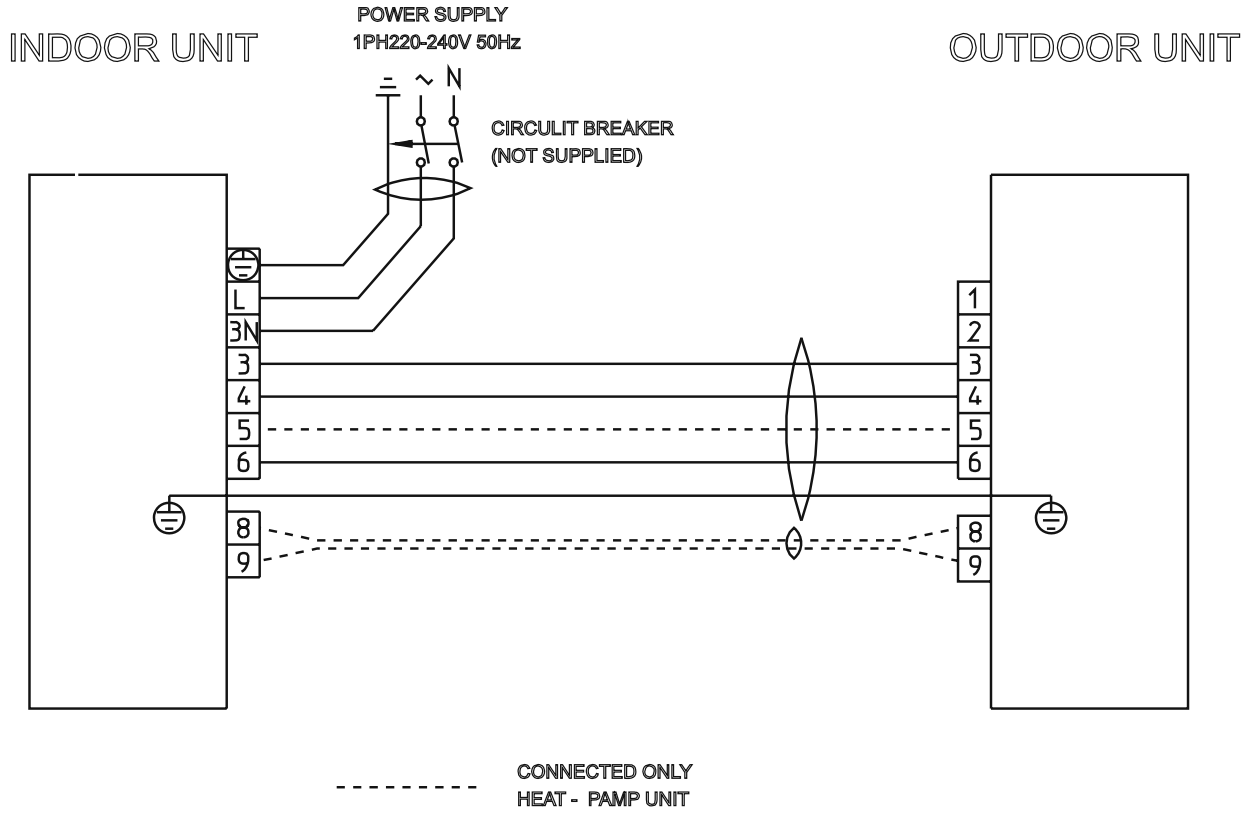


7.9 Outdoor Unit: OU7-24 / OU8-30 3PH

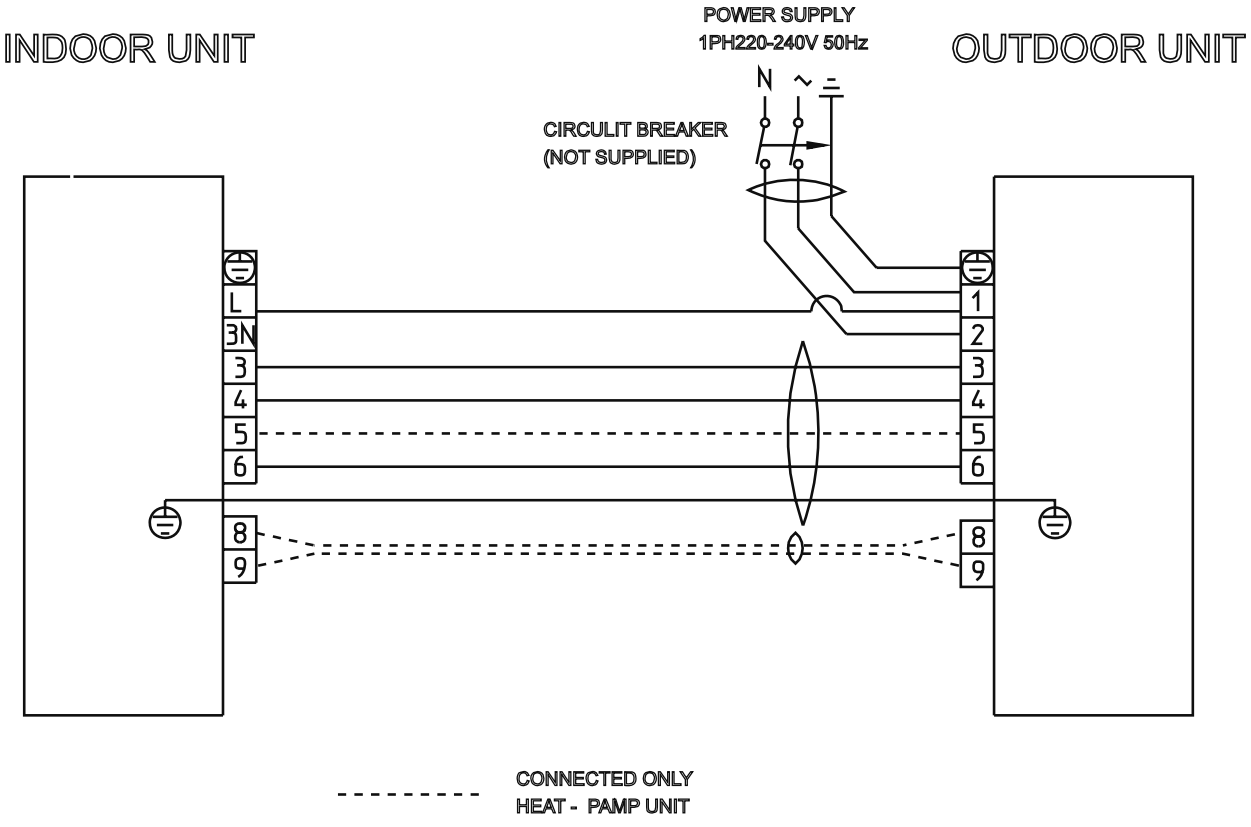

CAT N°: 435161 REV. 01
ATTENTION ! FOR INDOOR UNIT ELECTRICAL WIRING REFER TO INDOOR UNIT DIAGRAM
LEGEND:
Y/G - YELLOW/GREEN
BRN - BROWN
BLK - BLACK
BLU - BLUE
VIO - VIOLETTE
WHT - WHITE
ORN - ORANGE
CAP 1 - FAN 1 CAPACITOR
PRC - 3PH PROTECTOR
OCT - OUTDOOR COIL THERMISTOR
CH - CRANCKCASE HEATER
------- - OPTIONAL
RV - REVERCING VALVE
ASK - ALL SEASON KIT
COMPRESSOR
FAN MOTOR
CAP 1
OCT IN
FOR HEAT-PUMP ONLY.
RV
3PH RELAY
IMPORTANT BEFORE CONNECTING THE PRC, REMOVE THE WIRE JP1 BETWEEN 2 TABs AND CONNECT PRC ACCORDINGLY
IMPORTANT BEFORE CONNECTING THE ALL SEASON KIT, REMOVE THE WIRE JP2 BETWEEN 2 TABs
ALL SEASON KIT
TB1
JP1
TB2
TB8
JP 2
TB9
FOR ALL SEASON KIT
GND
COMP R/V O/F HEAT
CH
OCT OUT (8, 9)
POWER SUPPLY: (BY INSTALLER)
3PH ~ 400V 50Hz
5X15 ø FOR UNITS UP TO 7KW CAPACITY
5X2.5 ø FOR UNITS OVER 7KW CAPACITY
CABLES BETWEEN INDOOR AND OUTDOOR UNIT:
A. 8x15 ø
B. 2x0.5 ø
L3 L2 L1 N HEATER 1 3 4 5 6
POWER SUPLLY
(L3) (L2)
TO INDOOR UNIT
*INSTALLER
IN CASE OF "ASK KIT" CONNECTION TO THE UNIT
DO NOT CONNECT WIRE BETWEEN UNITS IN CONNECTION "6"

8. ELECTRICAL CONNECTIONS

8.1 SX 9, 12, 15, 18,



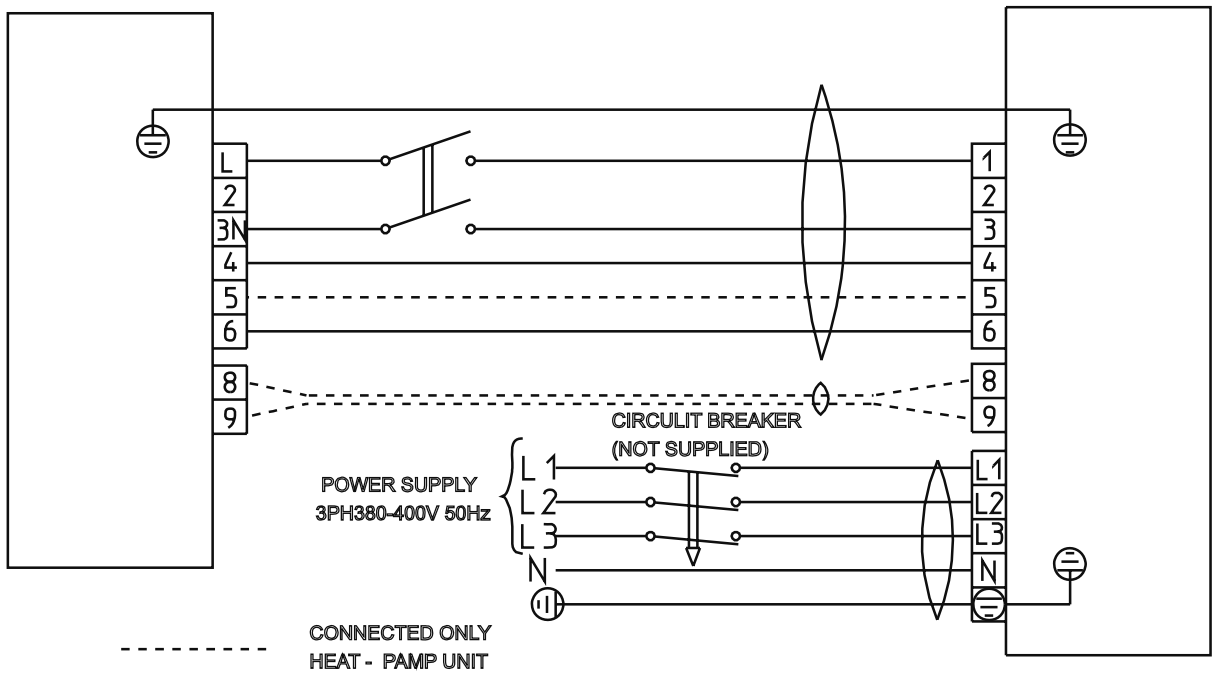
8.2 SX 18, 24,30 (Power Supply to Outdoor)



8.3 PX 18, 24, 30 3PH

INDOOR UNIT

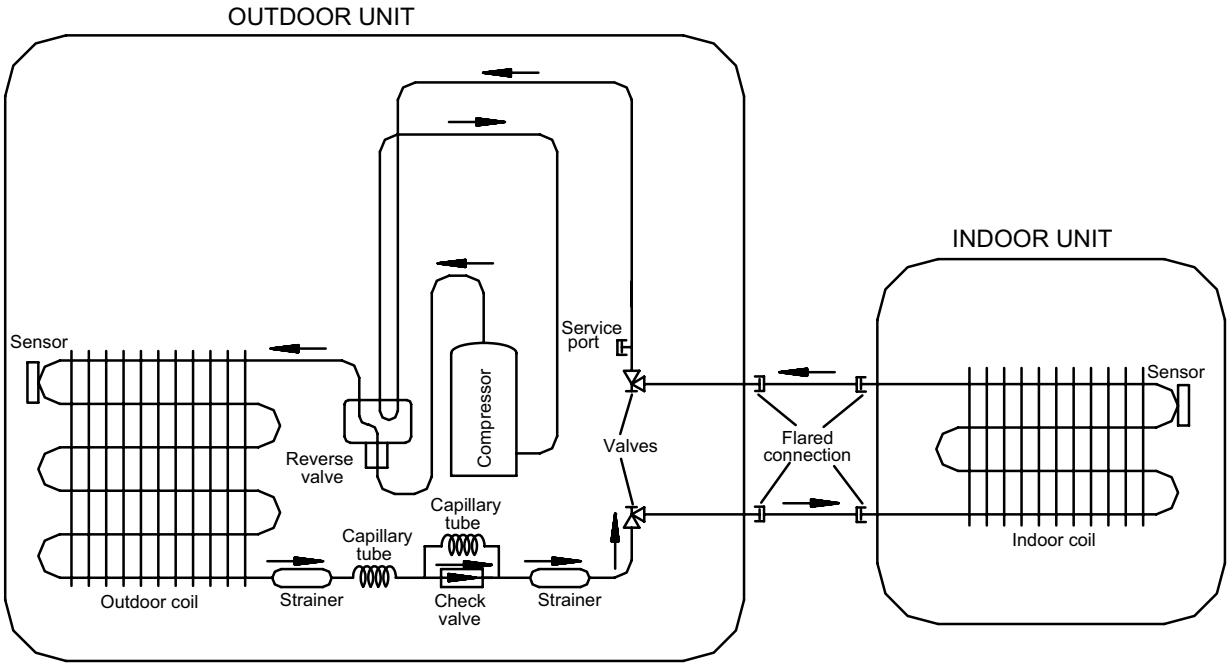
OUTDOOR UNIT



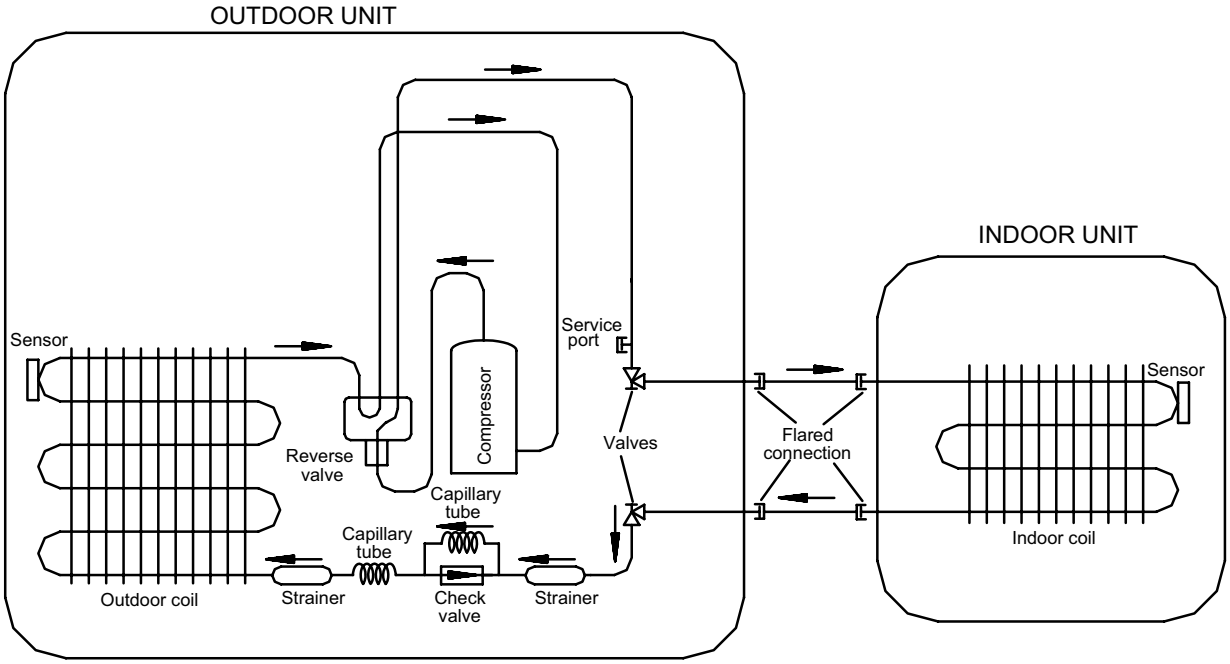
9. REFRIGERATION DIAGRAMS

9.1 Heat Pump Models

9.1.1 SX 9, 12, 15, 18 R410A

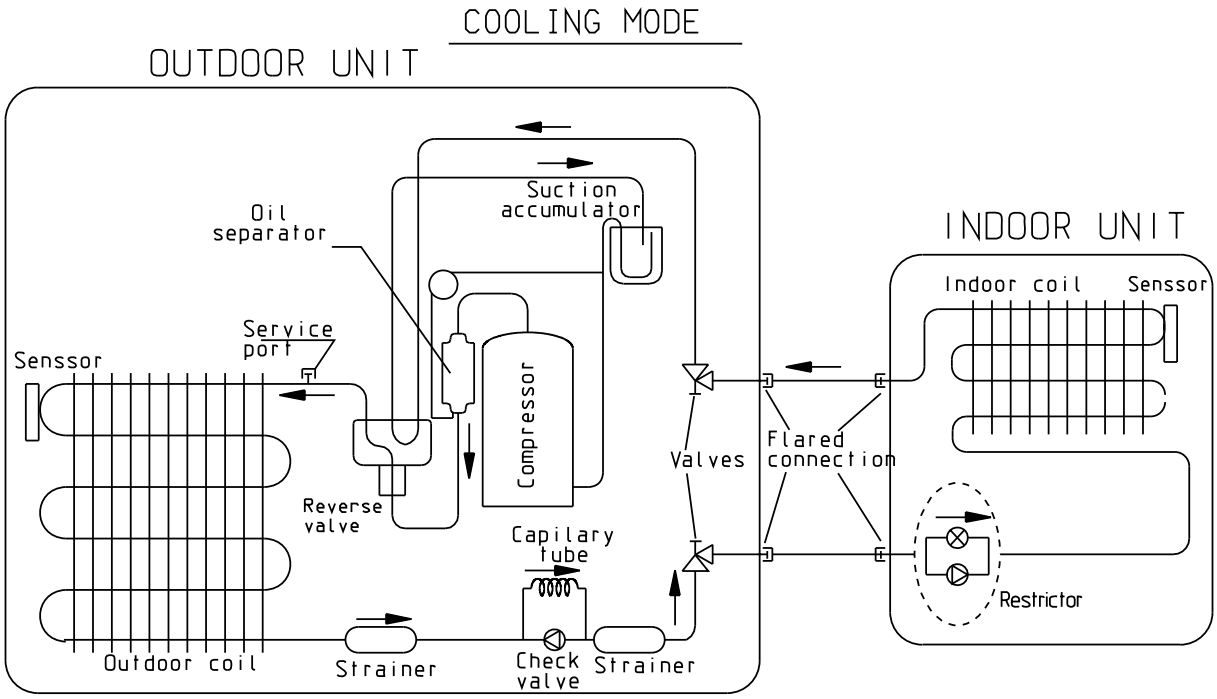


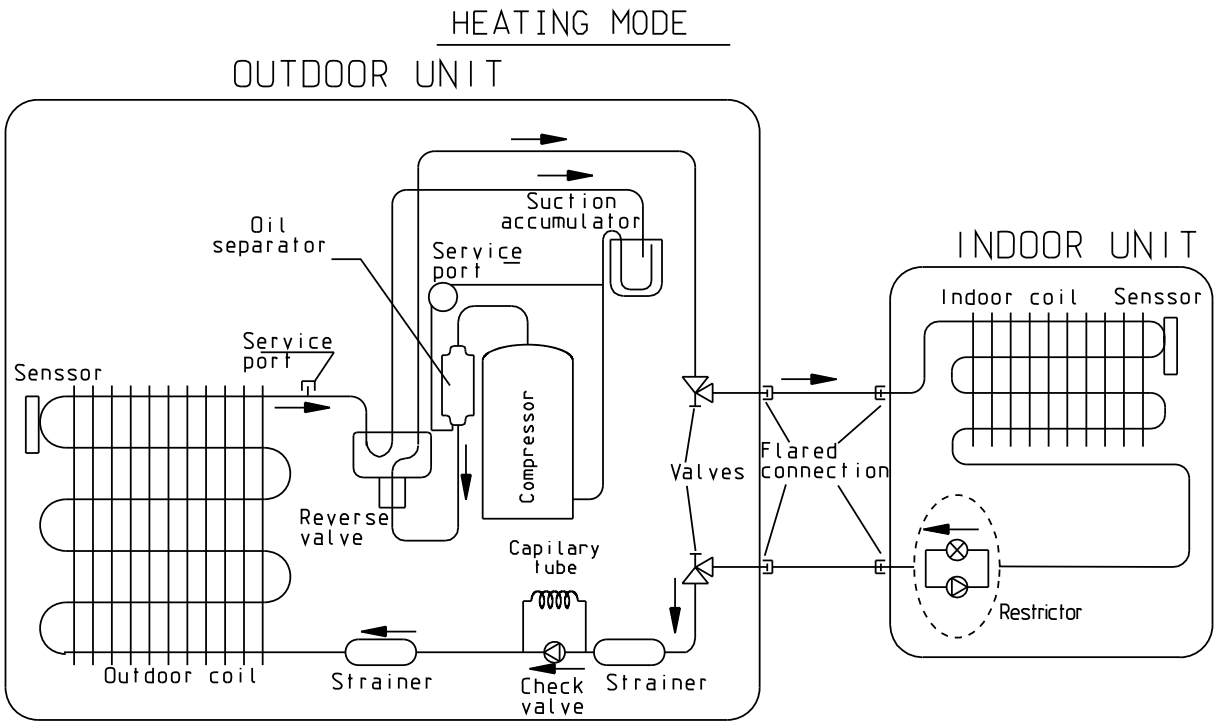
COOLING MODE



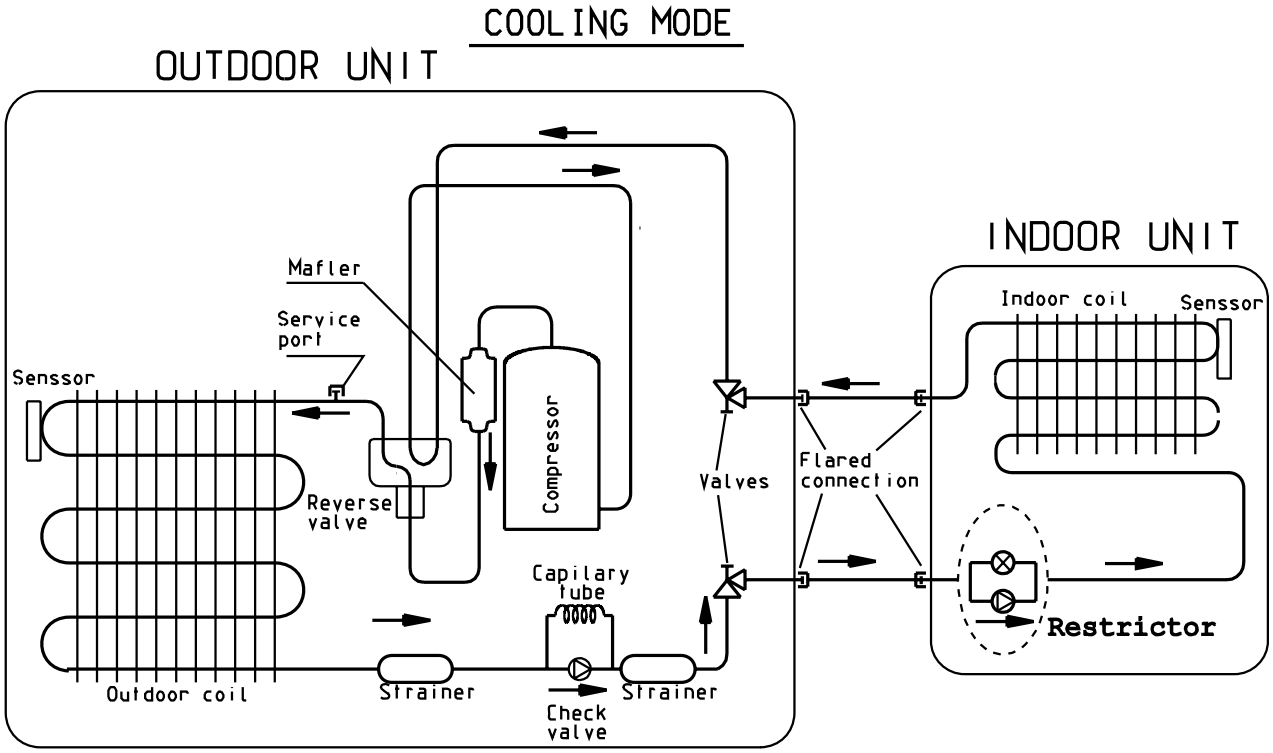
HEATING MODE

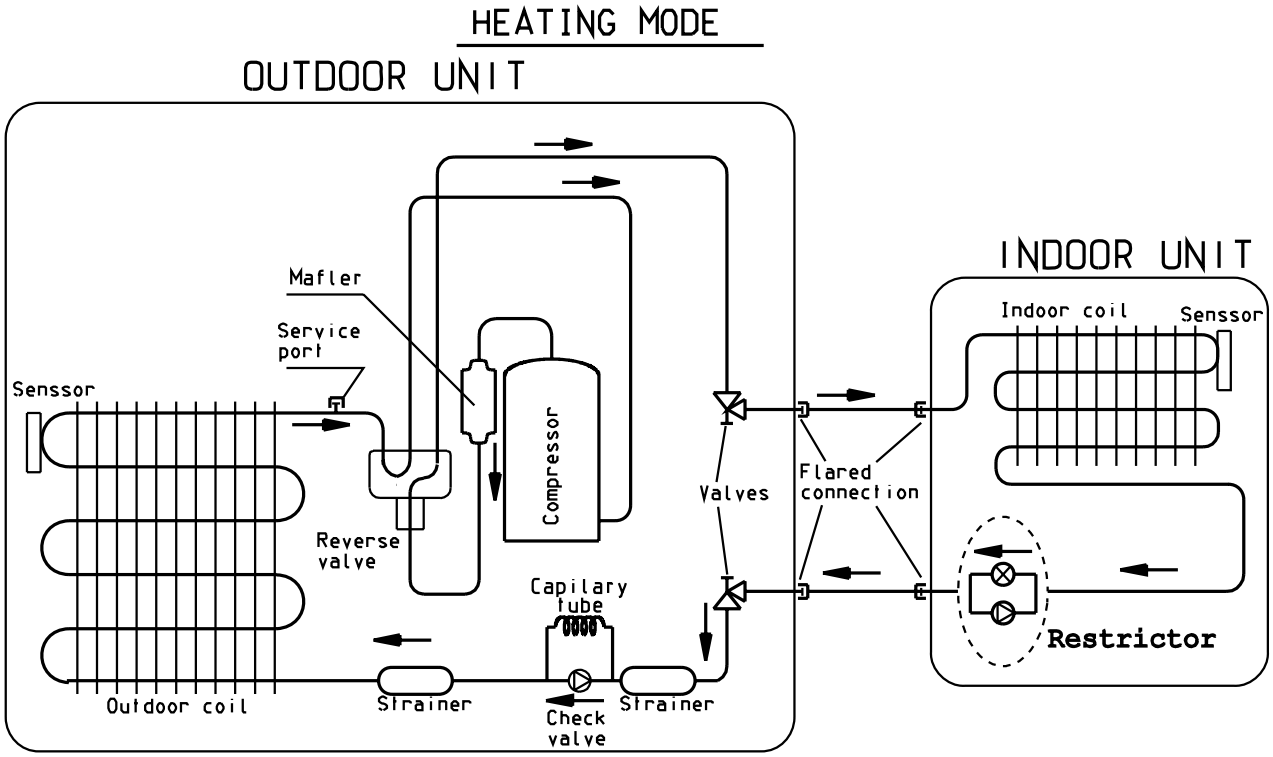
9.1.2 SX 24 R410A



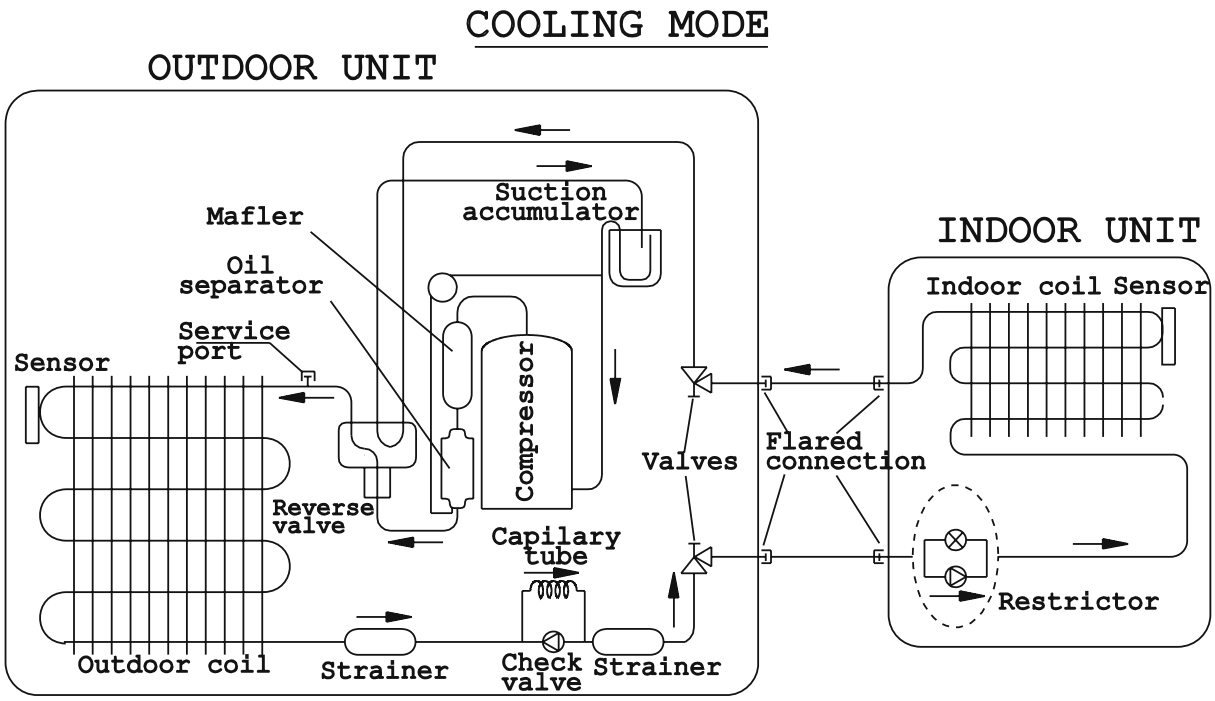


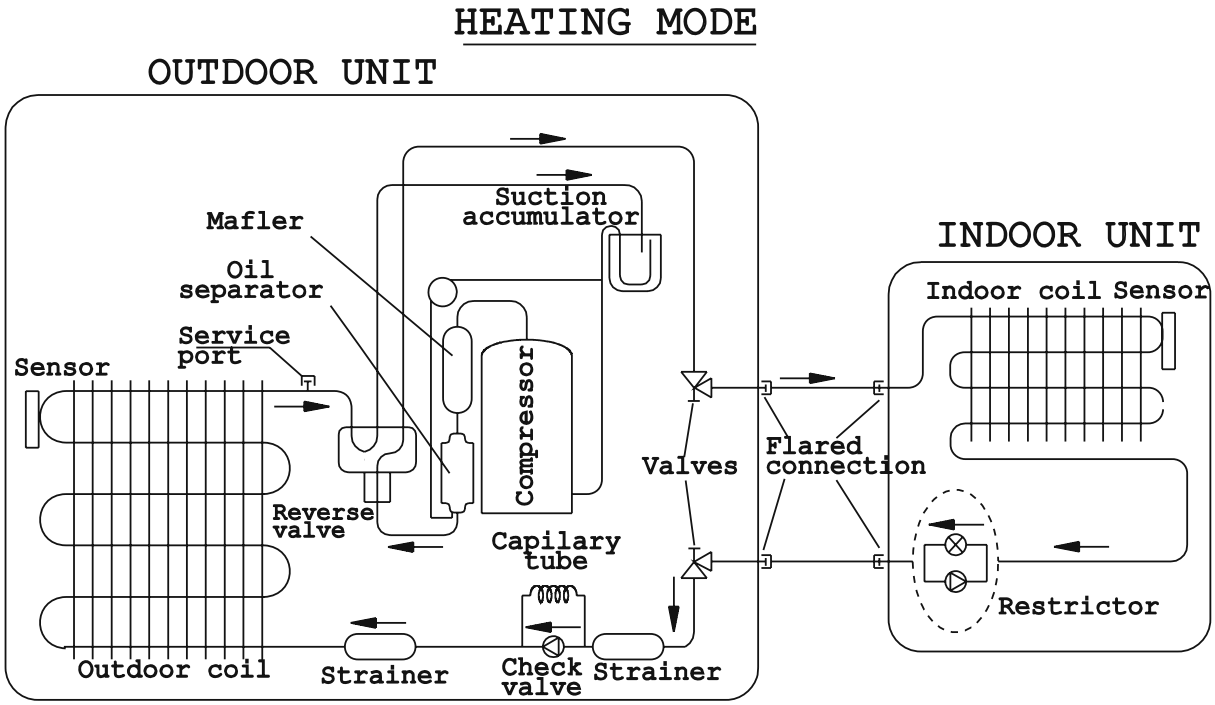
9.1.3 SX 24 / OU7-24Z R410A





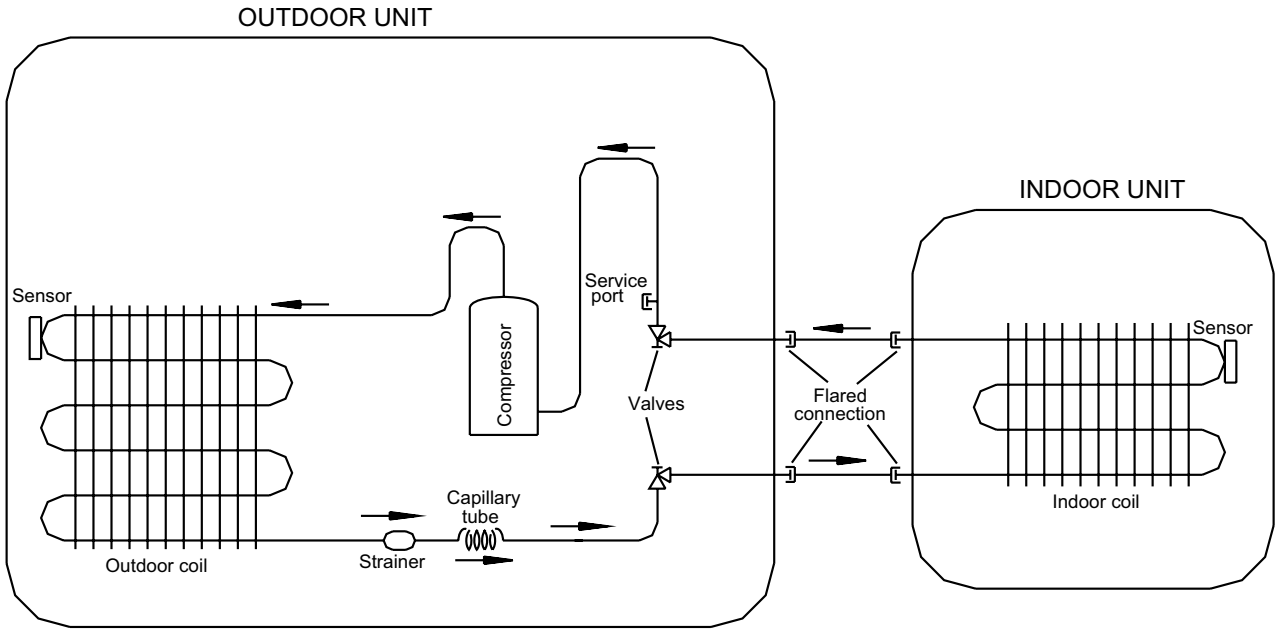
9.1.4 SX 30 R410A



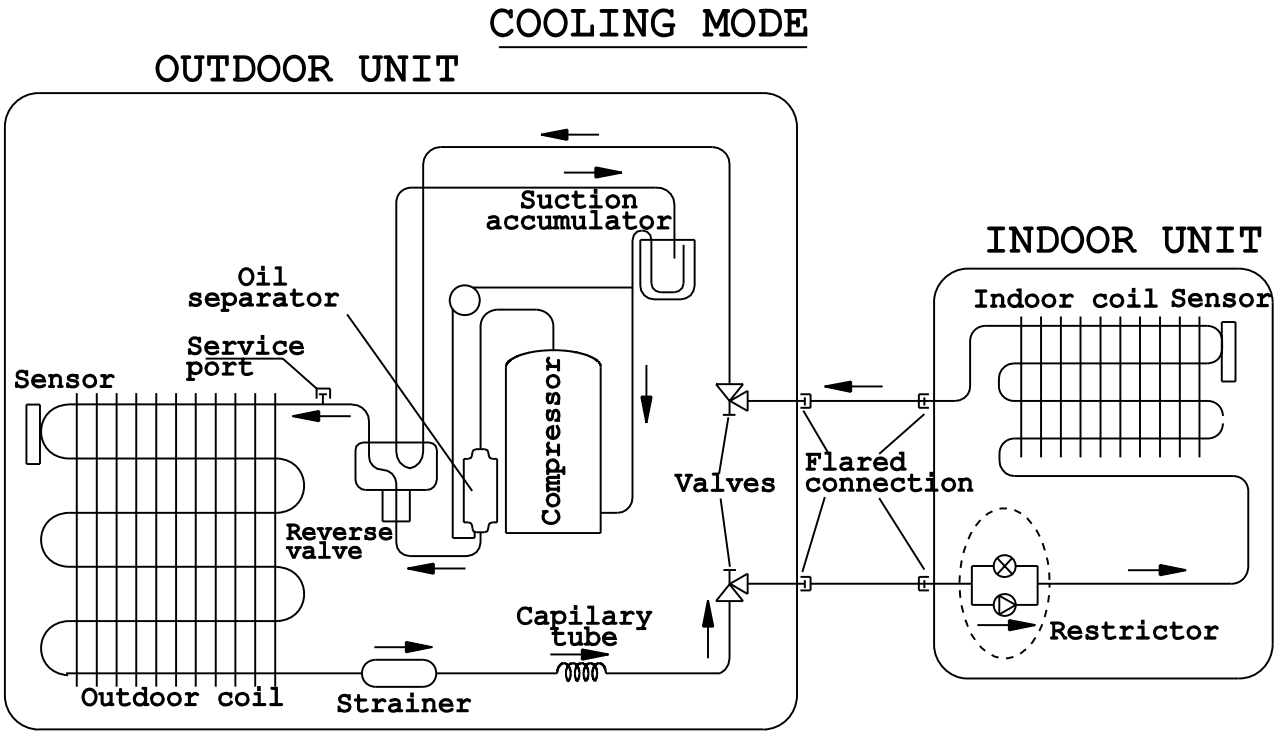


9.2 Cooling Only Models

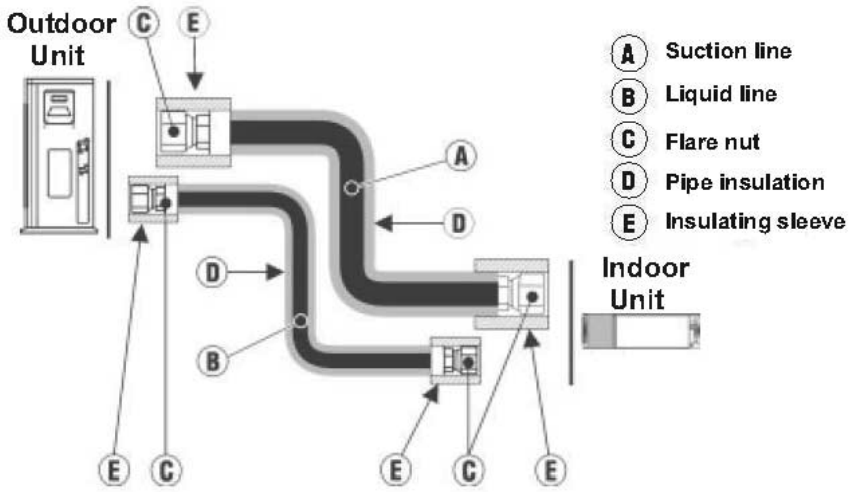
9.2.1 SX 9, 11, 15, 18

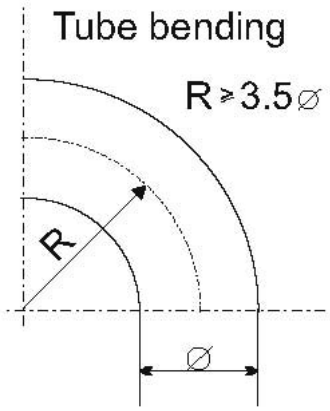


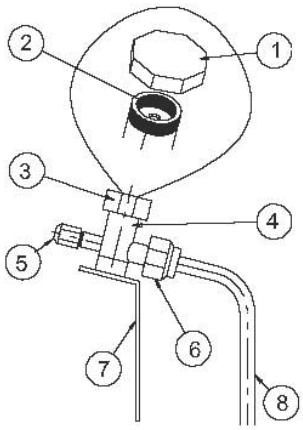
9.2.2 SX 24, 30



10. TUBING CONNECTIONS



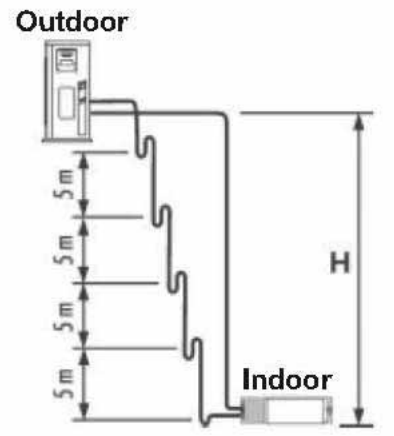




TUBE (Inch) / TORQUE (Nm)	1/4"	3/8"	1/2"	5/8"	3/4"
Flare Nuts	11-13	40-45	60-65	70-75	80-85
Valve Cap	13-20	13-20	18-25	18-25	40-50
Service Port Cap	11-13	11-13	11-13	11-13	11-13

1. Valve Protection Cap-end
2. Refrigerant Valve Port (use Allen wrench to open/close)
3. Valve Protection Cap
4. Refrigerant Valve
5. Service Port Cap
6. Flare Nut
7. Unit Back Side
8. Copper Tube

When the outdoor unit is installed above the indoor unit an oil trap is required every 5m along the suction line at the lowest point of the riser. Incase the indoor unit is installed above the outdoor, no trap is required.



11. CONTROL SYSTEM

11.1 Electronic Control

11.1.1 Introduction

The electronic control information is designed for service applications, and is common to the following groups of air-conditioners:

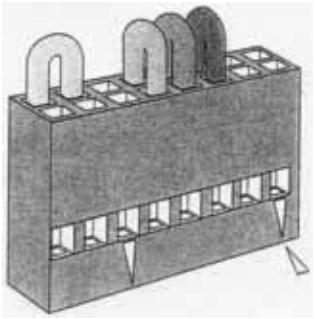
- **ST/RC** group -Cooling only / cooling and heating by heat pump.
- **SH group** -Cooling and heating by heat pump and supplementary heater.
- **RH group** -Cooling, heating by heaters only.

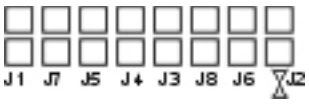
11.1.2 Model Plug Settings

Before installation, make sure to set the model plug conforming to the suitable group.

GROUP	**J6** Setting	**J2** Setting
ST / RC	Open	Open
SH	Closed	Open
RH	Closed	Closed

Model Plug





Group	Location of the jumpers
ST	
RC	
RH	
SH	

11.1.3 Remote Control DIP Switch Settings

SETTING SWITCH STATUS				DEFINITION	
SW. NO. 1	SW. NO. 2	SW. NO. 3	SW. NO. 4	RC3	RC4
OFF	OFF	--	--	RC-ALL MODES OF OPERATION	
ON	OFF	--	--	STD-COOL, FAN, DRY, ACTIVE	
OFF	ON	--	--	HEAT-COOL, FAN, DRY, ACTIVE	
ON	ON	--	--	AUTO FAN (AF)	
--	--	OFF	--	TEMP. DISPLAY IN °C DEGREES	VERTICAL SWING ONLY
--	--	ON	--	TEMP. DISPLAY IN °F DEGREES	HORIZONTAL & VERTICAL SWING FUNCTIONS TOGETHER
--	--	--	OFF	TIMER & CLOCK 12H AM, PM	DISABLE LCD & KEY ILLUMINATION
--	--	--	ON	TIMER & CLOCK 24H	ENABLE LCD & KEY ILLUMINATION

Reset operation **-** Press the 4 buttons simultaneously: “CLEAR “, “SET”, "HR +", ”HR -” for 5 seconds

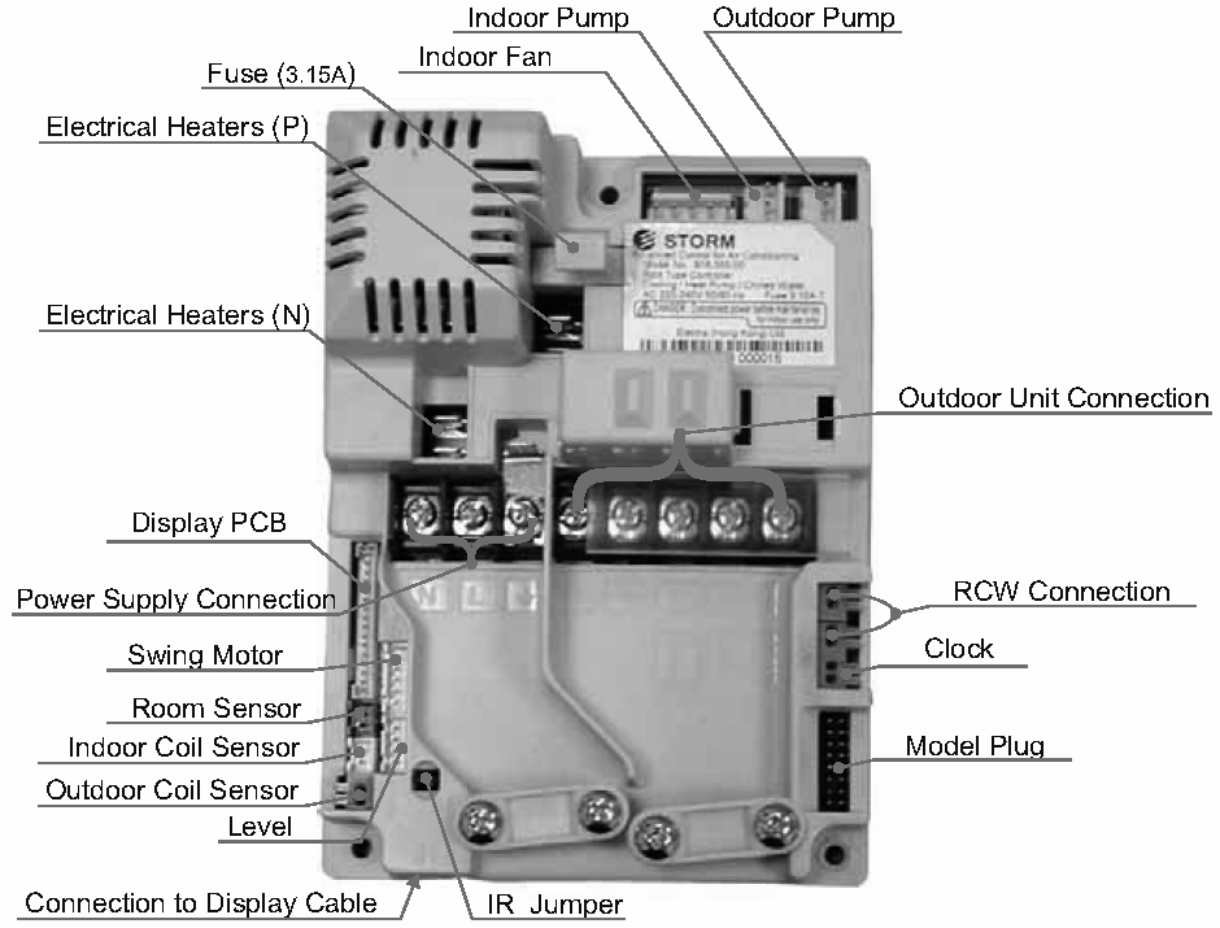
LEGEND

SW1, SW2 - Selection of RC/ST
SW3 – Selection of Display °C or °F in RC3 or swing function in RC4
SW4 – Selection of Time Display 12H AM/PM or 24H in RC3 or illumination in RC4
OFF = 0
ON = 1

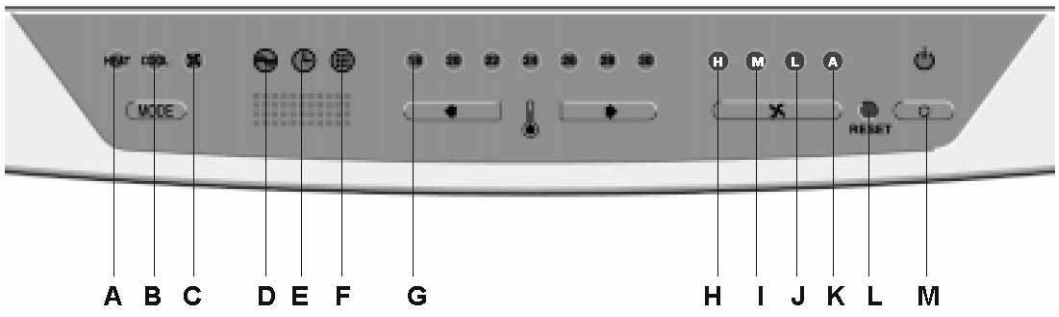
NOTE

After setting the DIP switches perform reset operation.

11.1.4 Main PCB Controller



11.1.5 Display Board :LEXAN



11.1.6 Display Board : Assembly

11.1.7 Legend :

A) Heating LED

B) Cooling LED

C) Fan LED

D) Operation LED

E) Timer LED

F) Filter LED

G) Temp' Set Point Indication

H) Fan Speed H,(High) **I,**(Medium) **J,**(Low) **K**,(AUTO)

L) Reset

M) STB'Y LED

11.2 Control Function

11.2.1 Abbreviations

AC - Alternate Current
A/C - Air-Conditioner
ANY - ON or OFF status
CLOCK - ON/OFF Operation Input, (dry contact)
COMP - Compressor
CPU - Central Processing Unit
CTV - Compensation Temperature Value
HE - Heating Element
HPC - High Pressure Control
H/W - Hardware
ICP - Indoor Condensation Pump
ICT - Indoor Coil Temperature (RT2) sensor
IF, IFAN - Indoor Fan
IR - Infrared
LEVEL1 - Normal Water Level
LEVEL2/3 - Medium/High Waterlevel
LEVEL4 - Overflow Level
Max - Maximum
Min - Minimum
min - Minute (time)
NA - Not Applicable
OCP - Outdoor Condensation Pump
OCT - Outdoor Coil Temperature (RT3) sensor
OF, OFAN - Outdoor Fan
OPER - Operate
Para. - Paragraph
RAT - Return Air Temperature (RT1) sensor
RC - Reverse Cycle (Heat Pump)
R/C - Remote Control
RCT - Remote Control Temperature
RH - Resistance Heater
RT - Room Temperature (i.e. RCT in IFEEL mode, RAT otherwise)
RV - Reversing Valve
SB, STBY - Stand-By
sec - Second (time)
Sect - Section
SH - Supplementary Heater
SPT - Set Point Temperature
ST - Standard (Model with Cooling Only)
S/W - Software
TEMP - Temperature
W/O - Without
ΔT - The difference between SPT and RT.
in Heat Mode: $\Delta T = SPT - RT$
in Cool/Dry/Fan Mode: $\Delta T = RT - SPT$

11.3 General Functions

11.3.1 COMP Operation

a. For each Mode including POWER OFF & SB, a Min time delay of 3 min before COMP restarting, excluding DEICING Mode (see para. 14.12.2).

b. The Min operation time of COMP under different operating conditions is:

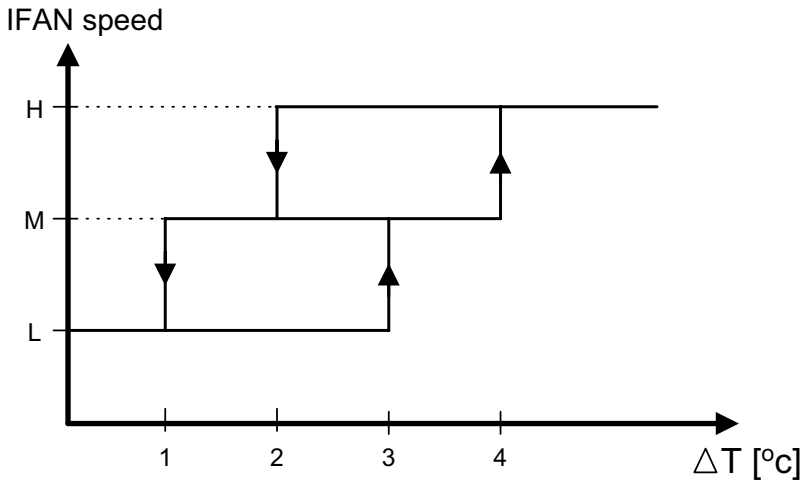
Operation Mode	Min Operation Time of COMP
Heat, Cool, HP protection or Auto Modes	3 min.
Fan, Dry, Overflow, Protection Modes, or Mode Change	Ignored

11.3.2 IFAN operation

a. Min time interval between IFAN speed change in AUTOFAN Mode is 30 sec.

b. Min time interval between IFAN speed change in H/M/L Mode is 1 sec.

c. IFAN speed in Heat/Cool AUTOFAN Mode is determined according to the following chart:



Where in Heat Mode: $\Delta T = SPT - RT$
in Cool Mode: $\Delta T = RT - SPT$

11.3.3 OFAN Operation

Min time interval between OFAN ON/OFF state changes is 30 sec.

11.3.4 HE Operation

a. Min Heaters ON or OFF time is 30 sec.

b. Heaters can never be in operation while IFAN is OFF.

c. In RH group, HE-1 and HE-2 will be activated only when COMP is not operating, except in Dry Mode.

11.3.5 Protections

a. High pressure protection is applicable to all operating modes.

b. Deicing control is valid in Heat and Auto Heat Modes only.

c. Defrosting control is valid in Dry, Cool, and Auto Cool Modes.

11.3.6 Thermistors Operation

a. Return air Temp. is detected by RAT in normal Mode, or by RCT (R/C sensor) in I-FEEL Mode.

b. Indoor Coil Temp. is detected by ICT.

c. Outdoor Coil Temp. is detected by OCT.

d. Definition of thermistor faults:

1) Thermistor is disconnected - the thermistor reading is below – 30^{O}C.

2) Thermistor is shorted - the thermistor reading is above 75^{O}C.

3) Thermistor Temp reading doesn't change -

a) This test is performed only once after a unit is switched from OFF/STBY to operation. At the first occurrence of 10 min continuous COMP operation, the current ICT are compared with those when the COMP was switched from OFF to ON 10 min before. If the ΔT is less than 3^{O}C, the thermistor is regarded as defective.

b) The ICT no-change error can be disabled together by connecting a 4.7kΩ resistor (5%) to the ICT connector. These resistors are equivalent to a thermistor 48+/-1^{O}C.

e. Cases for disabling ICT thermistor disconnected detection:

1) The detection of thermistor faults a. and b. above is disabled when Deicer Protection is started. The detection will be enabled again only after (1) the deicing is completed, and (2) COMP has been restarted and operated for 30 sec.

2) When all the following conditions are fulfilled:

a) 4.7kΩ resistor is connected to the OCT.

b) IFAN is OFF.

c) Compressor is ON.

d) ICT < -30 (disconnected).

11.3.7 RV Fault

This test is applied only in compressor units where 4.7kΩ resistor is not connected to the OCT.
The test is performed every time the unit is switched from OFF/STBY to OPER in Heat mode or changes operation mode from COOL/DRY to HEAT or (this applies also in AUTO COOL/HEAT mode).
If ICT is lower than 35°C at the time of mode change, then at the first occurrence of 15 min continuous COMP operation, ICT is compared with ICT reading when the COMP was switched from OFF to ON 15 min before. RV fault is defined when ICT decreases more than 5°C.
In this case, the COMP will stop and the SB LED will blink. The fault is reset after switching to SB or after mode change.

11.3.8 General Features

a. Allowed (control target) range for RAT is SPT +/-1ºC.

b. Whenever the unit is changed from COOL/DRY/STBY mode to HEAT mode or vice versa, the procedures below are followed:
Stop COMP for 3 min → Change RV state → Start COMP if necessary.

11.4 Cooling Mode

11.4.1 Cooling Mode – General

a. Mode Definition

Mode: COOL, AUTO (at Cooling)

Temp: Selected desired temperature.

Fan: HIGH, MED, LOW, AUTO.

Timer: Any

I-FEEL: ON or OFF

b. Room Temperature, RT, is detected by:

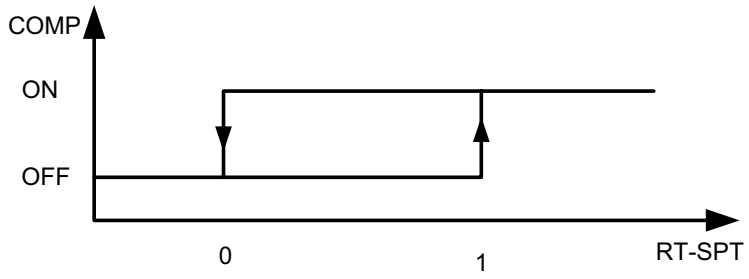
- RAT in normal operation, or
- RCT (R/C sensor) in I-FEEL mode.

c. Indoor Coil Temp is detected by ICT.

d. Outdoor Coil Temp is detected by OCT.

11.4.2 Control Functions

a. COMP Operation



b. OFAN Operation

- In normal operation OFAN operates together with the COMP.

c. IFAN Operation

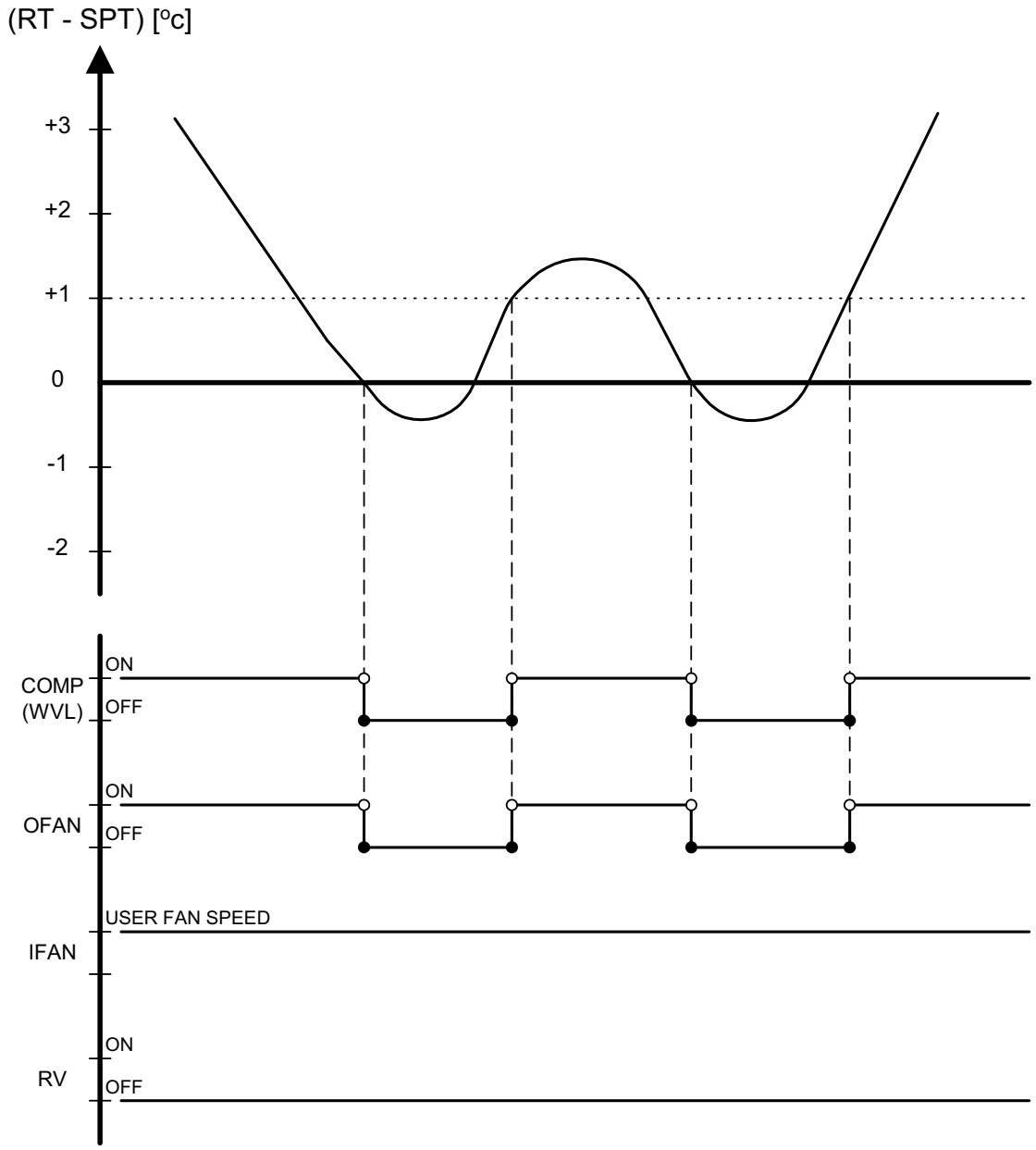
- IFAN will operate in ANY speed regardless the ICT or COMP state.
- IFAN speed will be determined according to user selection or AUTO-FAN logic

d. RV and HEATERS outputs

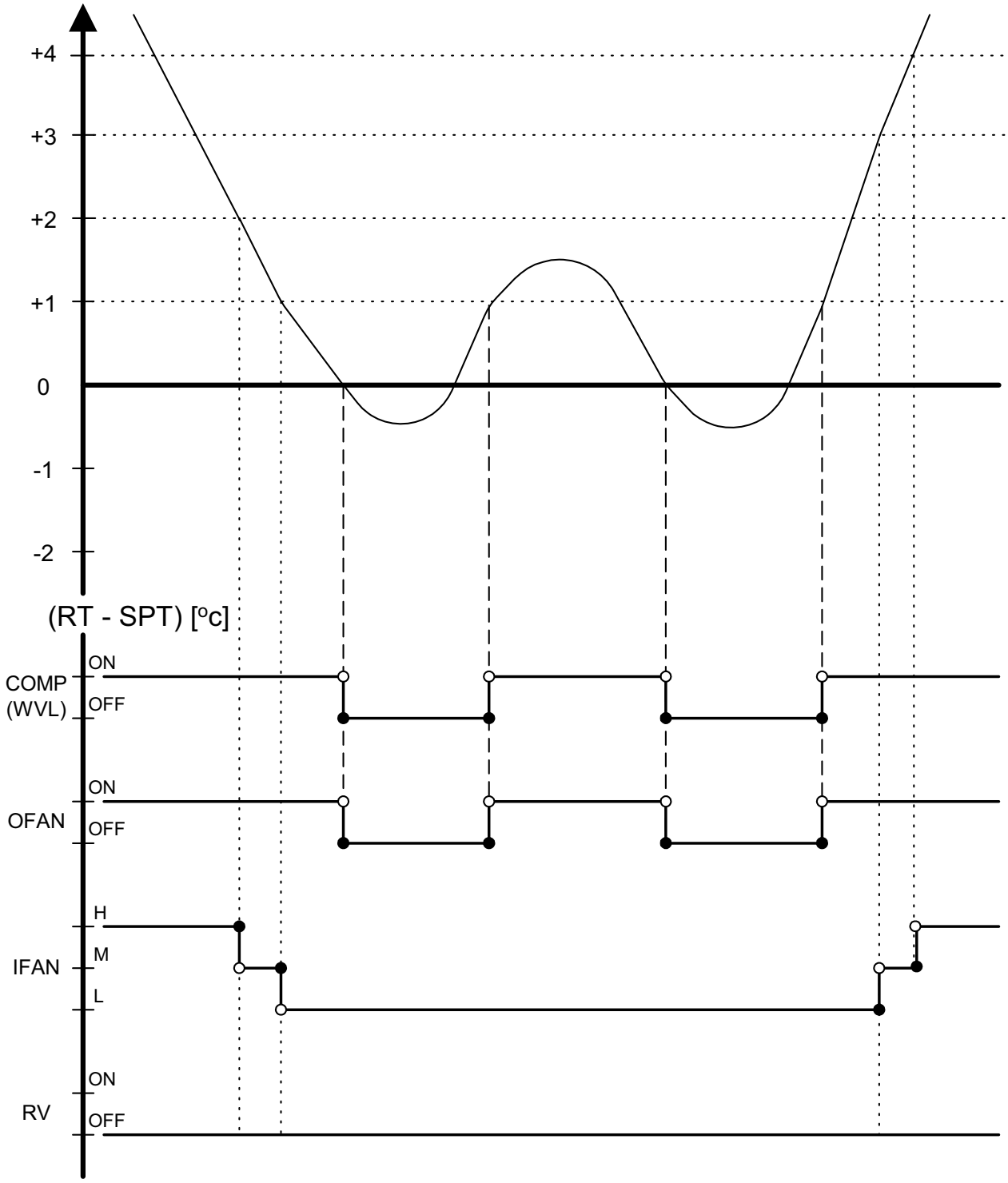
- RV and HEATERS are in OFF state in COOL mode.

11.4.3 Sequence Diagrams

a. Maintaining room temp at desired level by comparing RT and SPT with user defined IFAN speed.



b. Maintaining room temp at desired level by comparing RT and SPT with AUTO-IFAN.



11.5 Heating Mode

11.5.1 Heating Mode - General

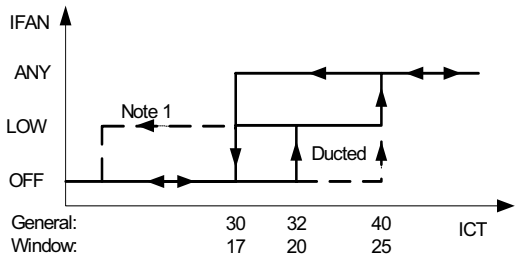
a. Compensation Procedure
When I-FEEL is OFF during HEAT mode: RT= RAT – CTV.
When I-FEEL is ON during HEAT mode: RT= RCT.

Type of Indoor	CTV
Wall Mounted	+3 °C
Mobiles / Floor Ceiling	+0 °C
Square /Window	+2 °C
Ducted	+4 °C
Cassettes	+4 °C

No compensation will be activated in Forced operation modes

b. IFAN operation rules for RC and SH groups:

1) As a general rule for **RC and SH groups,** IFAN will be switched ON according to the following graph:



NOTE 1

When COMP is ON (except WAX Model), IFAN will change from LOW to OFF either when:

a) ICT<28 and IFAN is on for 5 min or longer.

Or,

b) ICT<20

NOTE 2

When ICT is faulty:
When the compressor switches from OFF to ON (excluding deicing), IFAN will be on in ANY speed.
When the compressor switches from ON to OFF, the IFAN will change to LOW speed for 30 seconds and then it will be off.

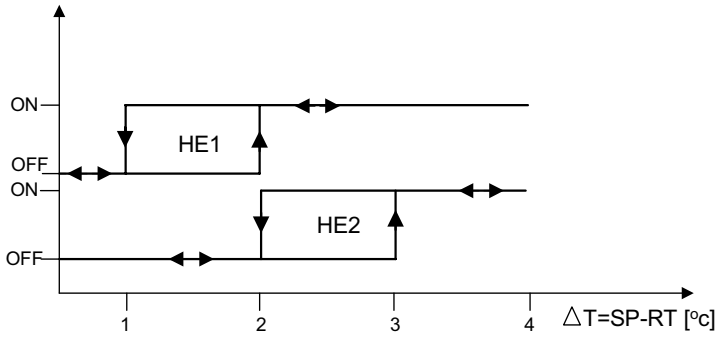
2) In SH or RC group, IFAN will operate for Min 30 sec according to 1) above after HEs are turned off, where in a case it has to be OFF, it will be forced to LOW speed.

c. IFAN operation rules for RH group

1) In RH group, IFAN starts when HE starts. When HE switches to OFF, IFAN switches to LOW for 30 sec and then stops.

d. Heaters operation rules for RC and SH groups:

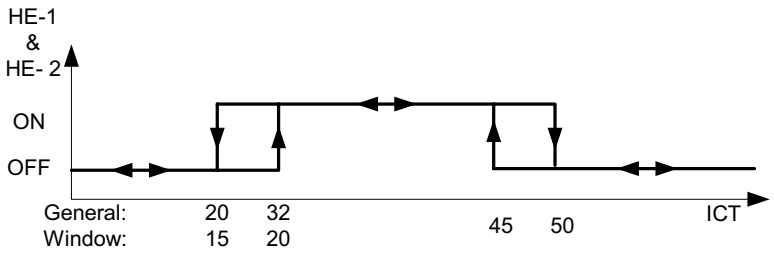
1) For both RC and SH groups, Heaters versus ΔT is as follows:



2) Operation rules for Heaters in RC group:

a) Heaters can be enabled only if IFAN is ON.

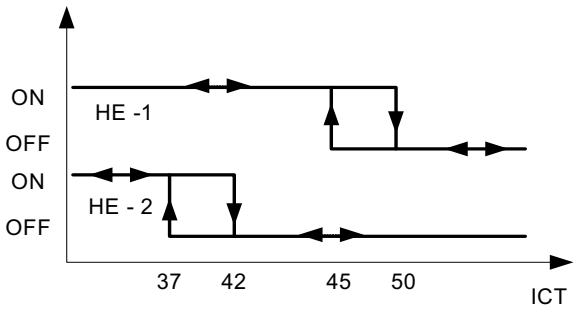
b) Heaters will operate according to ΔT **and** the following graph:



3) Rules for Heaters operation in SH group:

a) When heaters are to be ON and IFAN is to be OFF according to d. 1) above, IFAN will be forced to LOW speed.

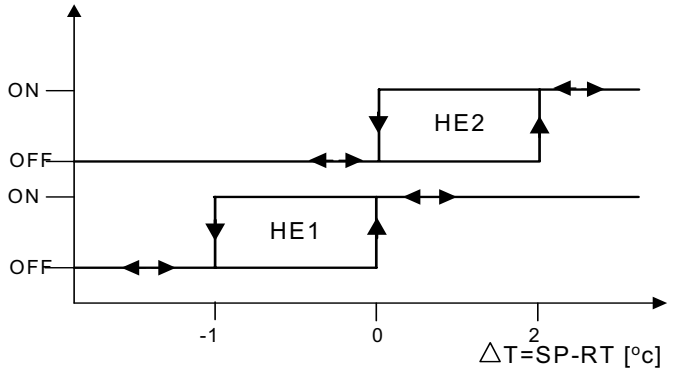
b) Heaters will operate according to ΔT and the following graph:



4) For both RC and SH groups, excluding deicing, HE1 and HE2 can be ON only when the compressor is ON.

e. Heaters operation rules for RH groups:

1) In RH group, HE operation is according to the difference between RAT and SPT.



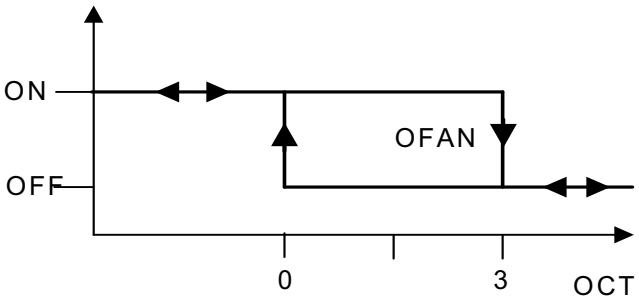
f. OFAN Operation for RC and SH groups

1) As a general rule for RC and SH groups, excluding protection modes, OFAN starts with the compressor.

2) When OFAN is ON it will operate according to the following conditions:

a) OFAN operates together with the compressor.

b) When $(RT \geq SPT - 2)\ and\ ICT \geq 50$ and the 4.7kΩ resistor is not connected to the OCT, OFAN will operate according to the following curve:



11.6 Heating, RC or SH Group

Mode: HEAT, AUTO (at heating)

Temp: Selected desired temperature

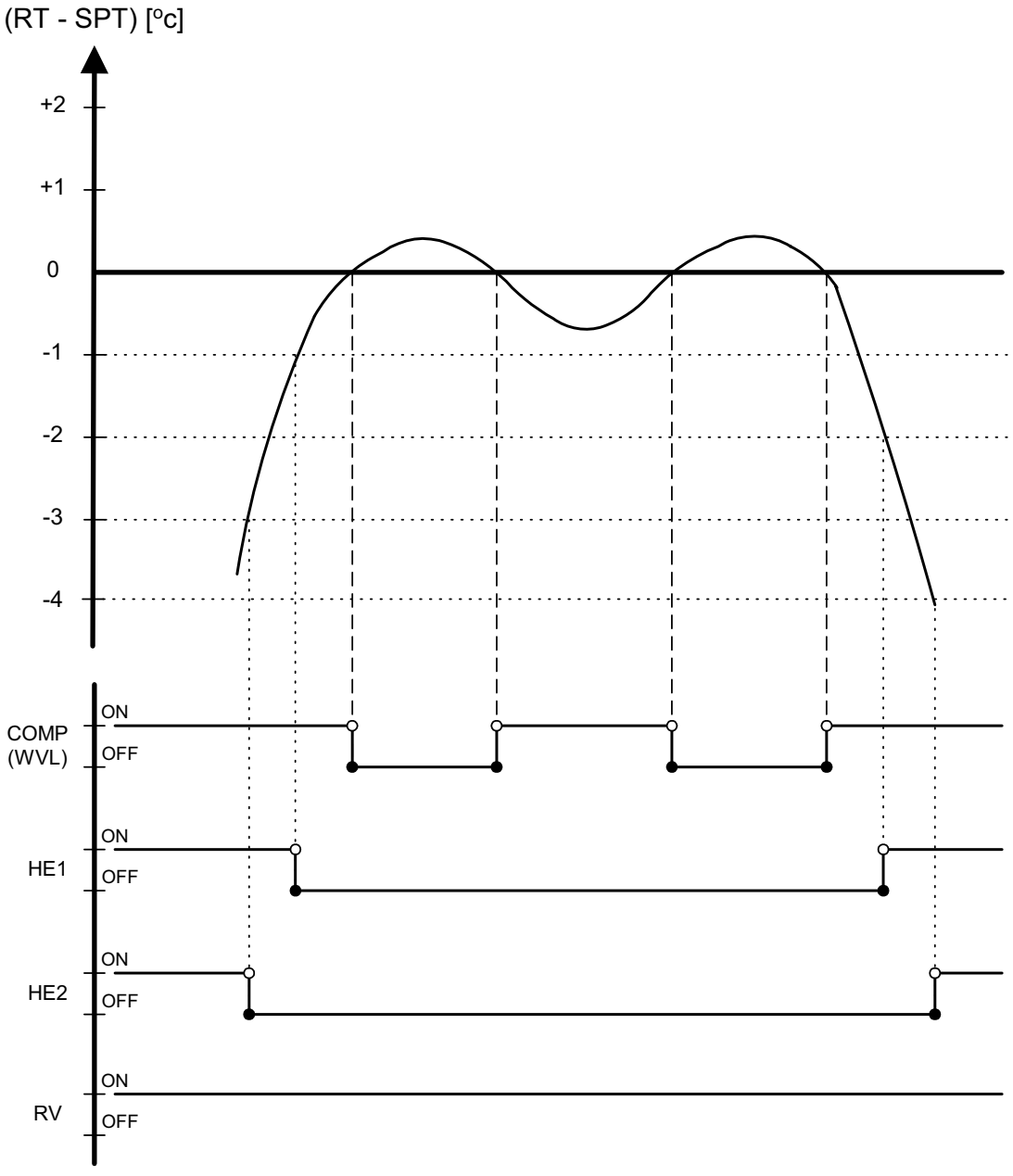
Fan: HIGH, MED, LOW

Timer: Any

I-FEEL: ON or OFF

11.6.1 Sequence Diagram

Maintains room temp. at desired level by comparing RAT or RCT to SPT.



11.7 Heating, RC or SH Group with Autofan

Mode: HEAT, AUTO (at heating)

Temp: Selected desired temperature

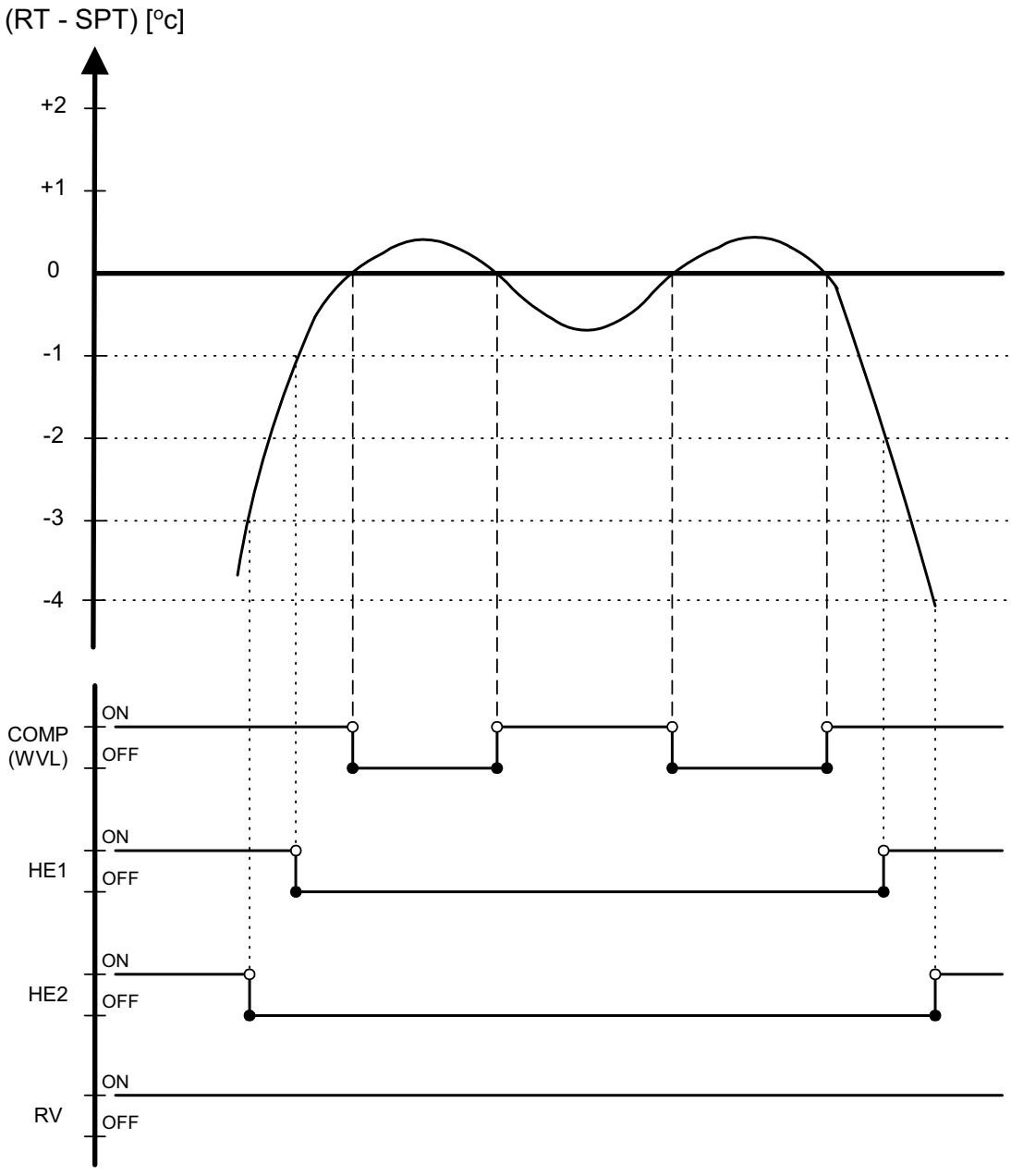
Fan: AUTO

Timer: Any

I-FEEL: ON or OFF

11.7.1 Sequence Diagram

Maintains room temp at desired level by controlling COMP, IFAN and OFAN.



11.8 Heating, RH Group

Mode: HEAT, AUTO (at Heating)

Temp: Selected desired temperature

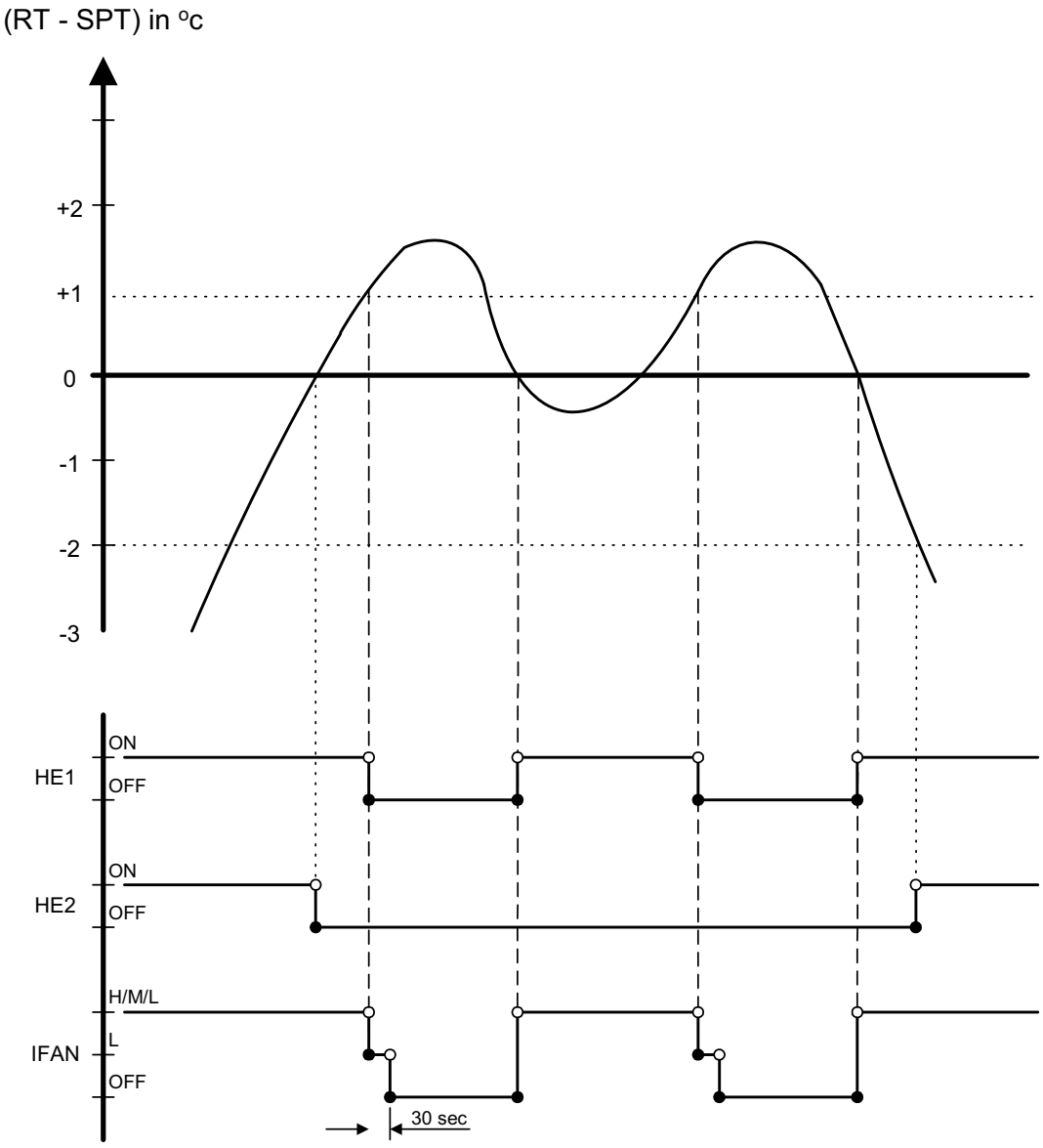
Fan: HIGH, MED, LOW

Timer: Any

I-FEEL: ON or OFF

11.8.1 Sequence Diagram

Maintains room temp at desired level by controlling Heating Elements: HE1 or HE2.



11.9 Heating, RH Group, with AUTOFAN

Mode: HEAT, AUTO (at Heating)

Temp: Selected desired temperature

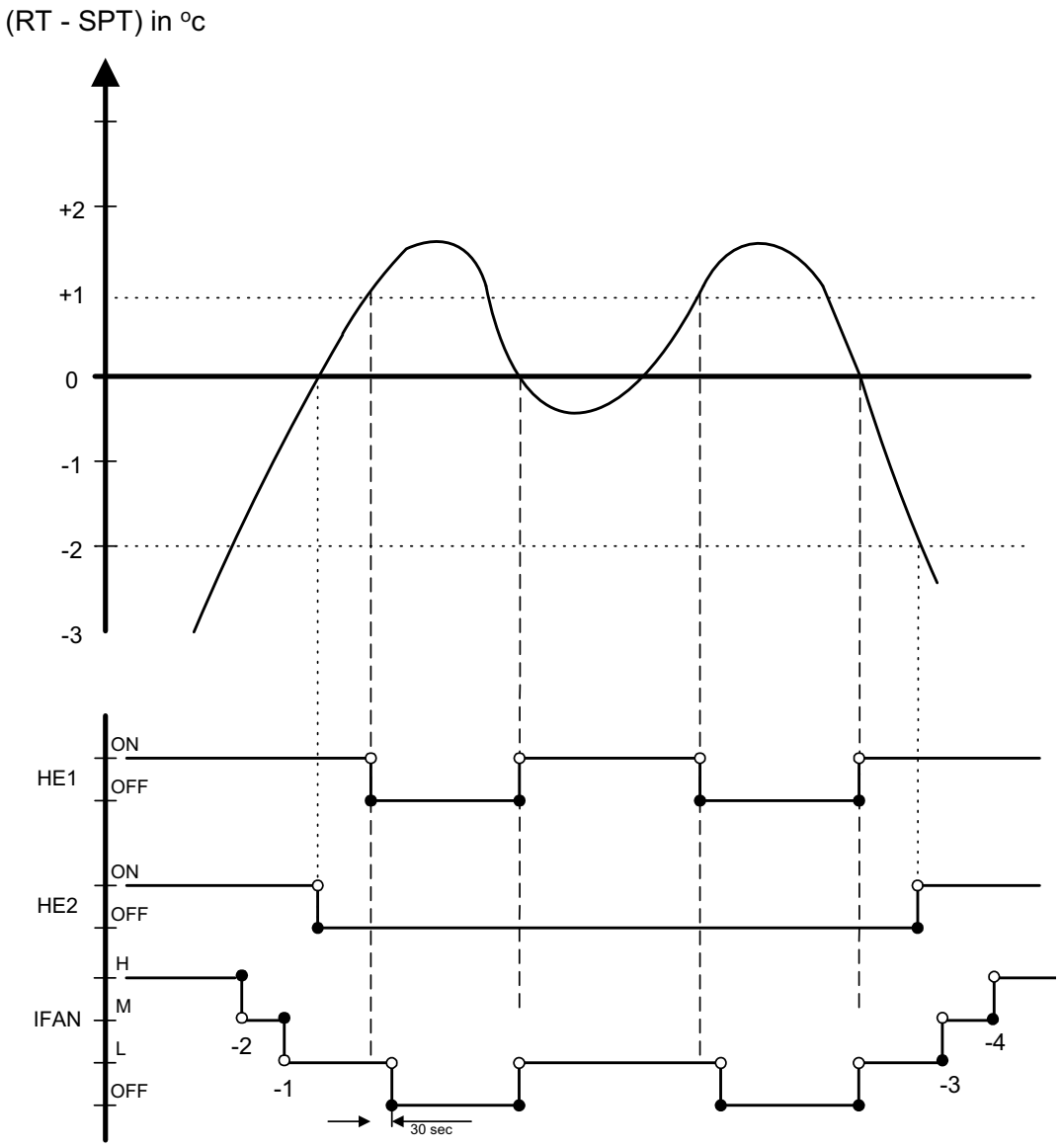
Fan: AUTO

Timer: Any

I-FEEL: ON or OFF

11.9.1 Sequence Diagram

Maintains room temp. at desired level by controlling the 2-Stage Electric Heaters.



11.10 Automatic Cooling or Heating

11.10.1 Automatic Cooling or Heating - General

The AUTO Mode is for models with compressor and the WVL-RH only. The WVL-ST, RC and SH units do not work in AUTO Mode.

a. Mode Definition

Mode: AUTO

Temp: Selected desired temperature

Fan: Any

Timer: Any

I-FEEL: ON or OFF

b. Switching-temperature between Cooling and Heating is SPT $\pm$ 3^{O}C.

c. When the AUTO Mode is started with SPT +/-0 ^{O}C, the unit will not select Auto Heat or Auto Cool mode immediately. Instead, the unit will be in a temporary FAN Mode with IFAN operating at low speed. The proper Auto Heat mode or Auto Cool will be started whenever the RT reaches SPT-1^{O}C or SPT+1^{O}C respectively.

d. For RC & SH units, Mode change between Auto Heat & Auto Cool Modes is possible only after the COMP has been OFF during the last T minutes.

Mode Change	Time, T
Auto Cool to Auto Heat	3 min
Auto Heat to Auto Cool	4 min

e. For RH and WVL-RH units, Mode change between Auto Heat & Auto Cool Modes is possible after the COMP/HEs have been OFF during the last T minutes.

Mode Change	Time, T
Auto Cool to Auto Heat	COMP off for 3 min
Auto Heat to Auto Cool	HEs off for 3 min

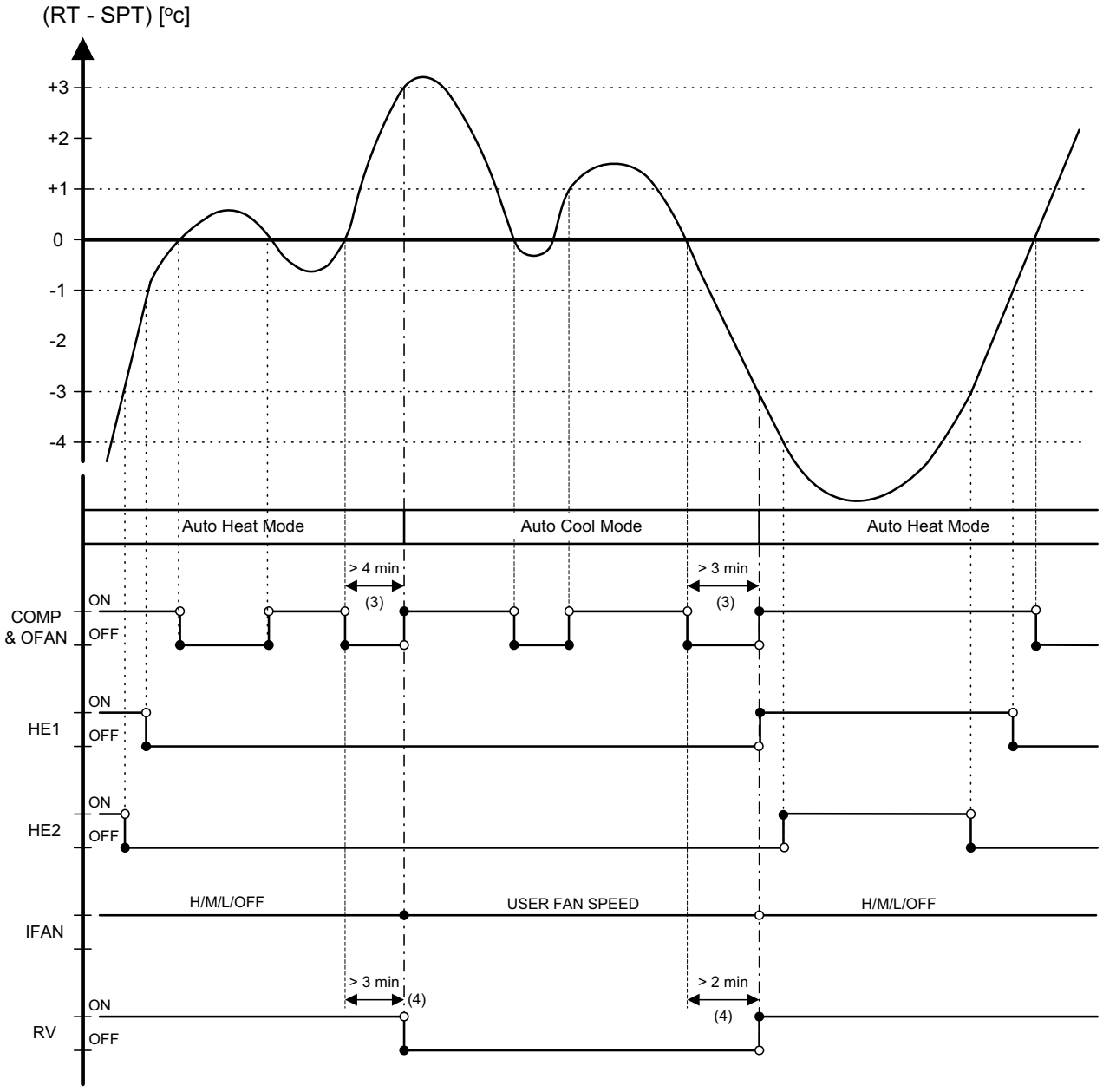
f. When unit is changed form Cool/Dry Mode to Auto Mode, the unit will continue to operate in (Auto) Cool Mode until the conditions for switching from Auto Cool to Auto Heat are satisfied.

Similarly, when unit is changed from Heat Mode to Auto Mode, the unit will continue to operate in (Auto) Heat Mode until the conditions for switching from Auto Heat to Auto Cool are satisfied.

11.10.2 Sequence Diagrams

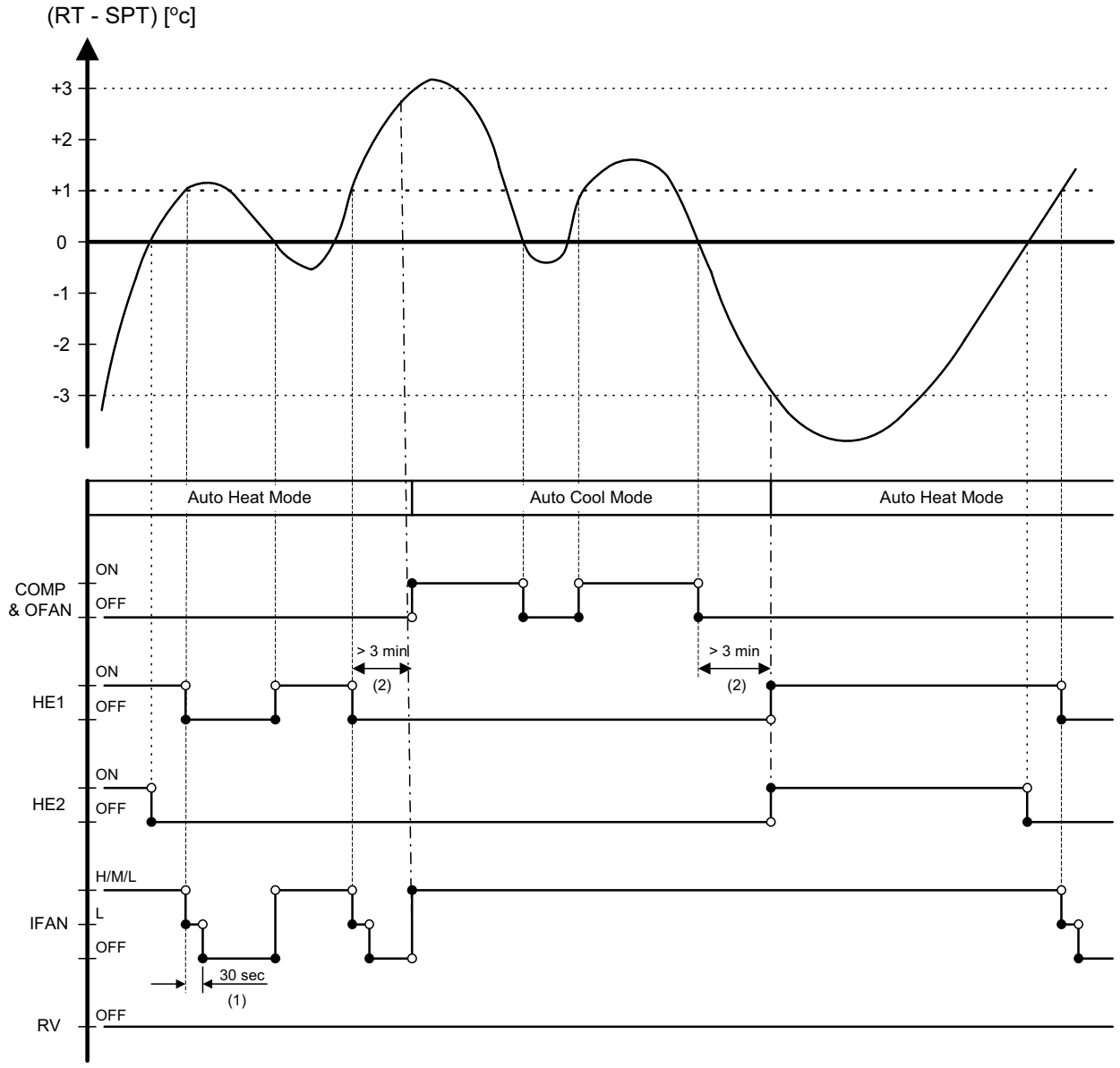
a. Auto Cooling or Heating, RC or SH Groups

Maintains room temp. at desired level by selecting between cooling and heating modes.



b. Auto Cooling or Heating RH Group

Maintains room temp. at desired level by selecting between Cooling or Heating Modes.

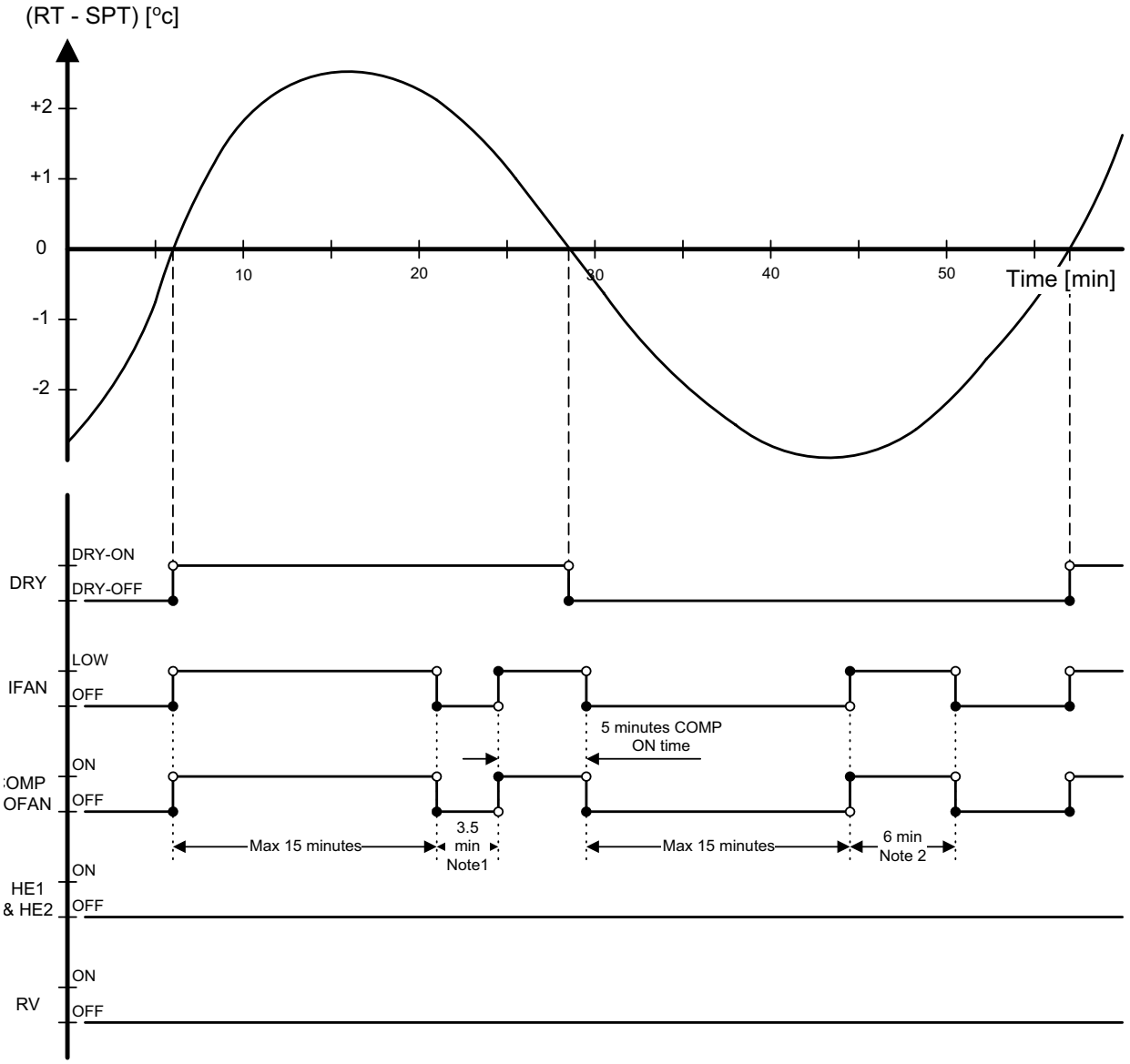


11.11 Dry Mode

11.11.1 Dry, ST or RC Group or P2000 Model with Any Group Settings

Mode: DRY
Temp: Selected desired temperature
Fan: LOW (automatically selected by software)
Timer: Any
I-FEEL: Any

Control function
Reduce room humidity with minimum temp. fluctuations by operating in Cool Mode with LOW speed IFAN.



NOTES

1. **When DRY is ON, the COMP is forced OFF for 3.5 min (longer than the 3 min Min COMP- OFF time) after every 15 min of continuous COMP operation.**
2. **When DRY is OFF, the COMP is forced ON for 6 min (longer than the 3 min Min COMP- ON time) after every 15 min of continuous COMP OFF time.**
3. **When DRY is changed from ON to OFF or vice versa, the limits mentioned in (1) & (2) are ignored. The COMP operation is only controlled by the 3 min Min OFF time and 1 min Min ON time.**
4. **In DRY Mode, IFAN is LOW when COMP is ON, and is OFF when COMP is OFF.**
5. **HEs are always OFF in DRY Mode.**

11.11.2 DRY, SH or RH group

Mode: DRY

Temp: Selected desired temperature

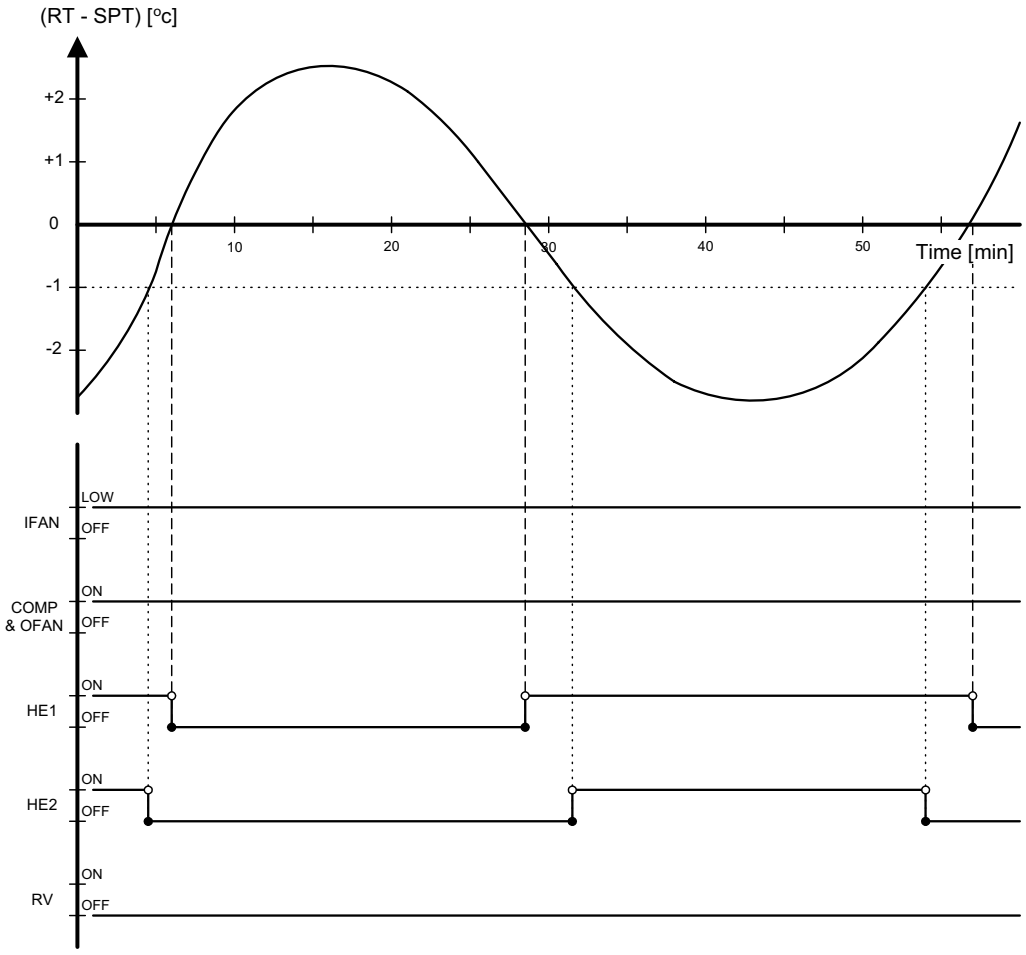
Fan: LOW (automatically selected by software)

Timer: Any

I-FEEL: Any

Control function

Reduces room humidity with minimum temp. fluctuations by operating in Cool Mode with LOW speed IFAN and HE.



11.12 Protection

11.12.1 Cooling Mode Protections

a. Indoor Coil Defrost

Mode: COOLING, DRY, AUTO

Temp: Selected desired temp.

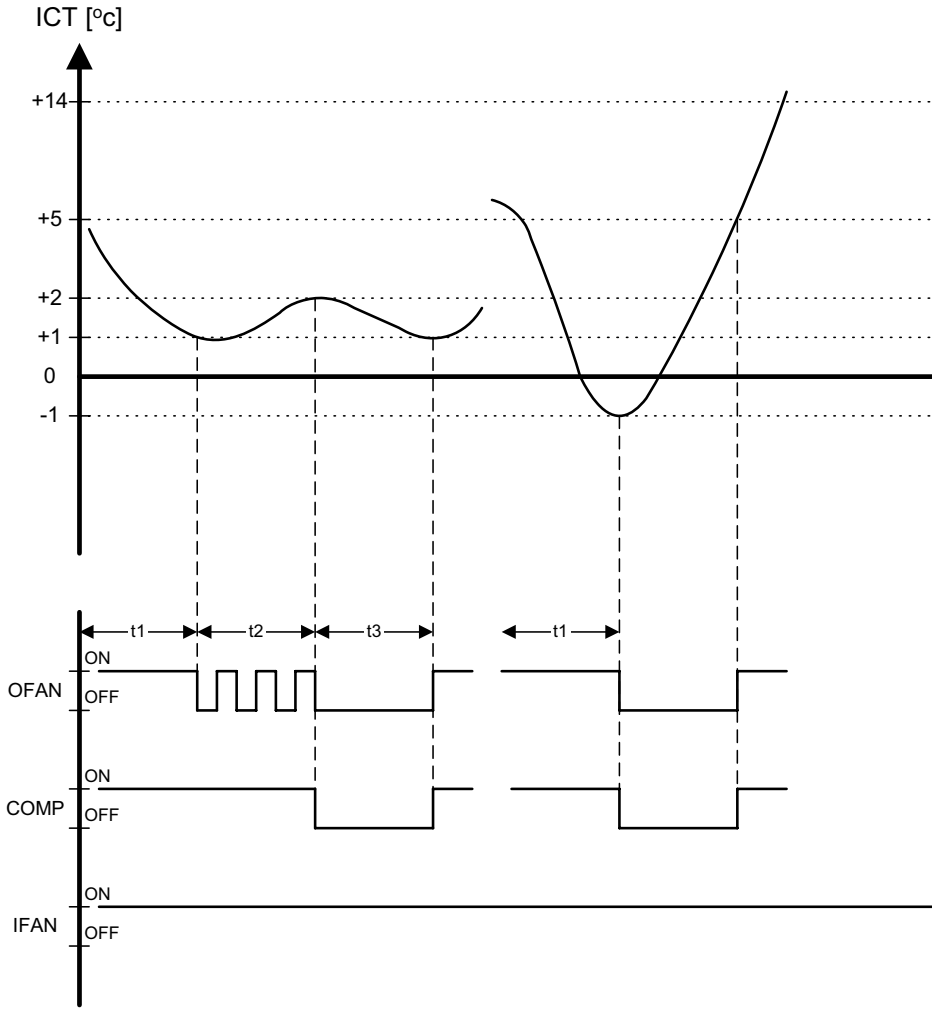
Fan: Any

Timer: Any

I-FEEL: ON or OFF

Control Function

Protects the indoor coil from ice formation at low ambient temperatures.



t1 = 5 min minimum for each COMP starting.
t2 = OFAN cycling (alternate between ON and OFF every 30 sec) for 20 min maximum.
t3 = COMP and OFAN stops for 10 min minimum.

b. High Pressure Protection

Mode: (AUTO) COOLING or DRY

Temp: Selected desired temperature

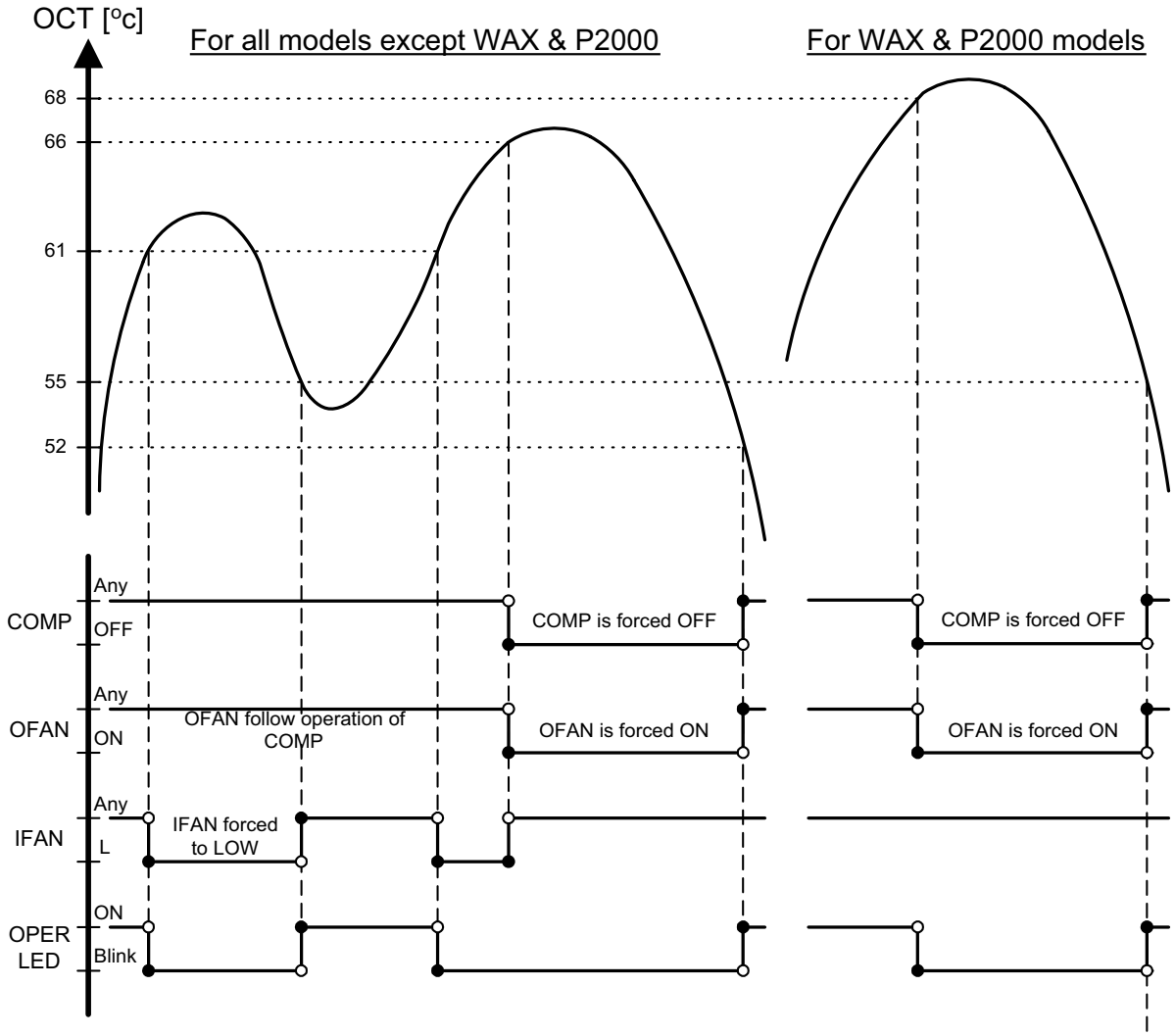
Fan: Any

Timer: Any

I-FEEL: ON or OFF

Control Function

To protect the COMP from the high pressure build-up in the outdoor coil during normal cooling operation, by switching OFF the IFAN and COMP.



NOTE

The ICT is also monitored during COOL and DRY modes, in case the RV control circuit is faulty. Whenever ICT reaches 70°C, which indicates a high pressure in the indoor coil, the COMP will be forced OFF automatically. The COMP can be turned ON again only after the ICT is under 70°C again and after the 3 min COMP ON delay time. The OPER LED will not blink in this case.

11.12.2 Heating Mode Protections

a. Outdoor Coil Deicing (excluding RH Group)

Mode: HEATING, AUTO (at heating)

Temp: Selected desired temperature

Fan: Any

Timer: Any

I-FEEL: Any

Control function

To protect the outdoor coil from ice formation by controlling COMP & RV operation.

1) Deicer Activation Algorithm

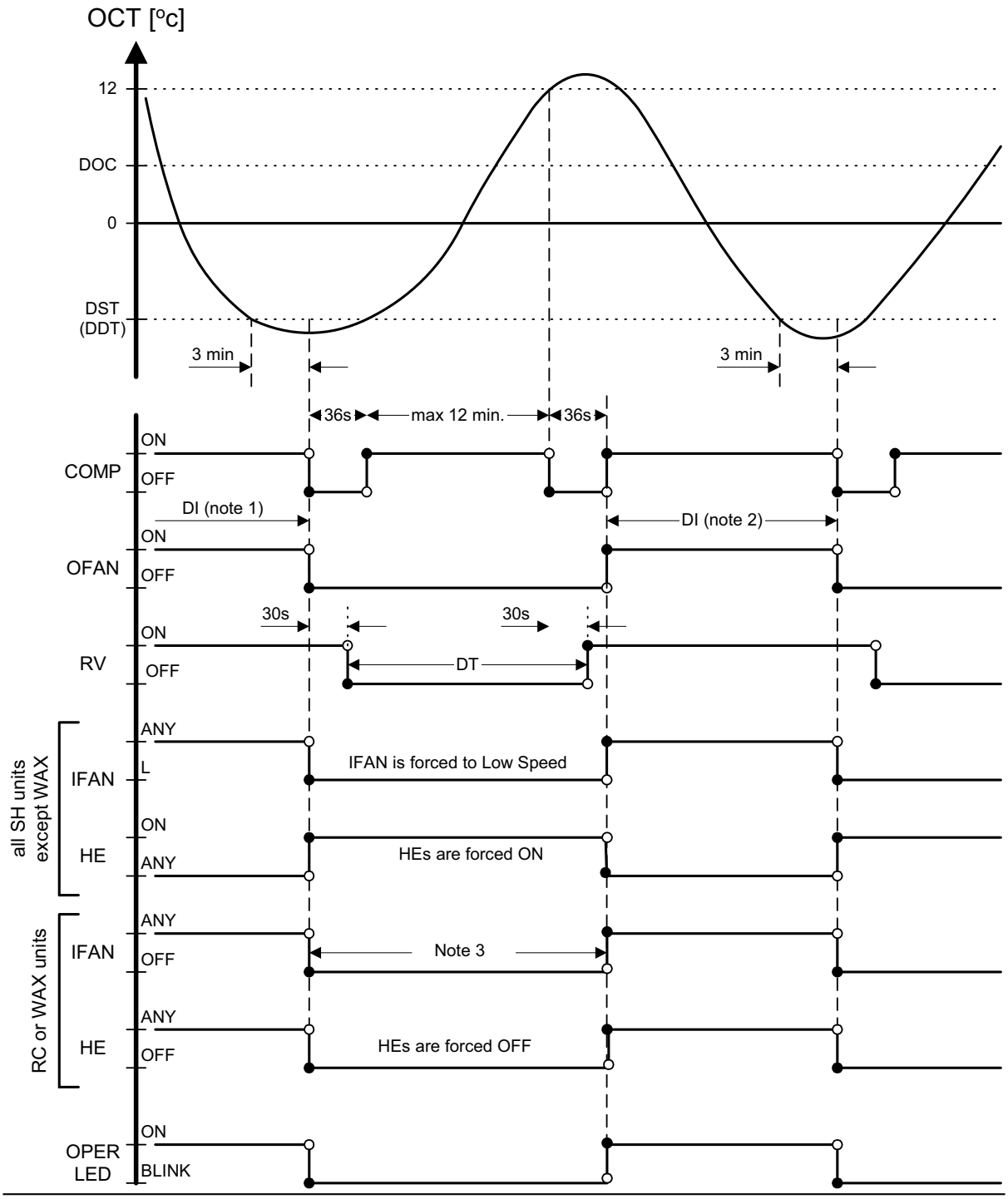
a) Static deicer threshold is -5°C

b) Dynamic deicer threshold changes of 3°C in 3 minutes in the OCT temperature

c) In first COMP activation (after SB or OFF), if OCT < 0°C, min time to first deicer is 10 min else 40 min.

d) In a case of reading 3 successive OCT values below –10°C and previously 3 successive OCT values of 43°C (4.7 K) , the unit will activate deicing procedure.

2) Deicing procedure



NOTES

1. **In the following Deicing cycles, the time interval between two Deicing cycles activation is between 30 to 80 min.**
2. **For RC group, IFAN is forced OFF.**
3. **For SH group, HEs are forced ON and IFAN is forced to operate at LOW speed, regardless of the ICT and difference between RAT & SPT.**
4. **When jumper J7 is set, the DST value is -2°C.**

b. High Pressure Protection (excluding RH Group)

Mode: (AUTO) HEATING

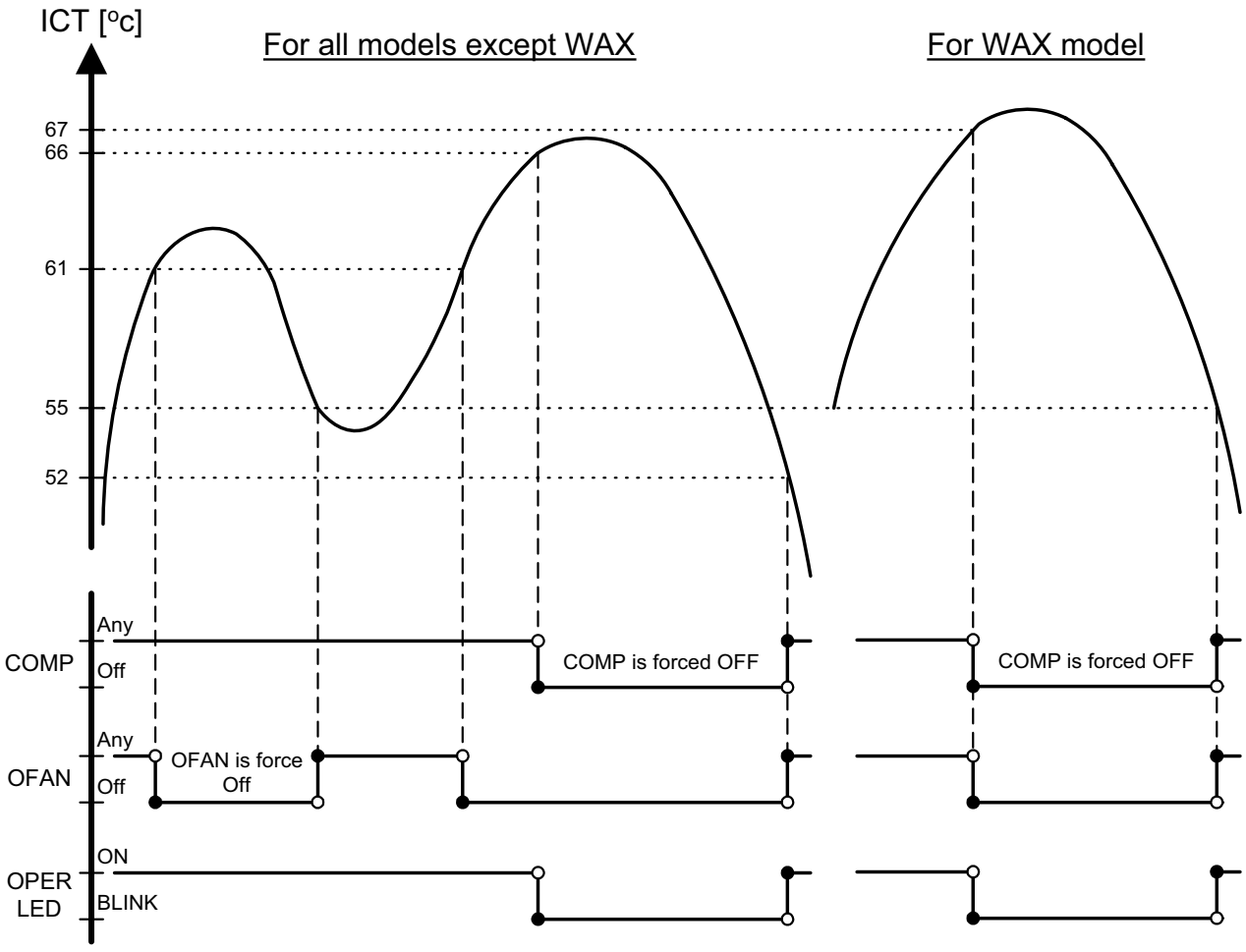
Fan: Any

Timer: Any

I-FEEL: ON or OFF

Control Function

Protects the compressor from high pressure by switching OFF the OFAN and COMP.

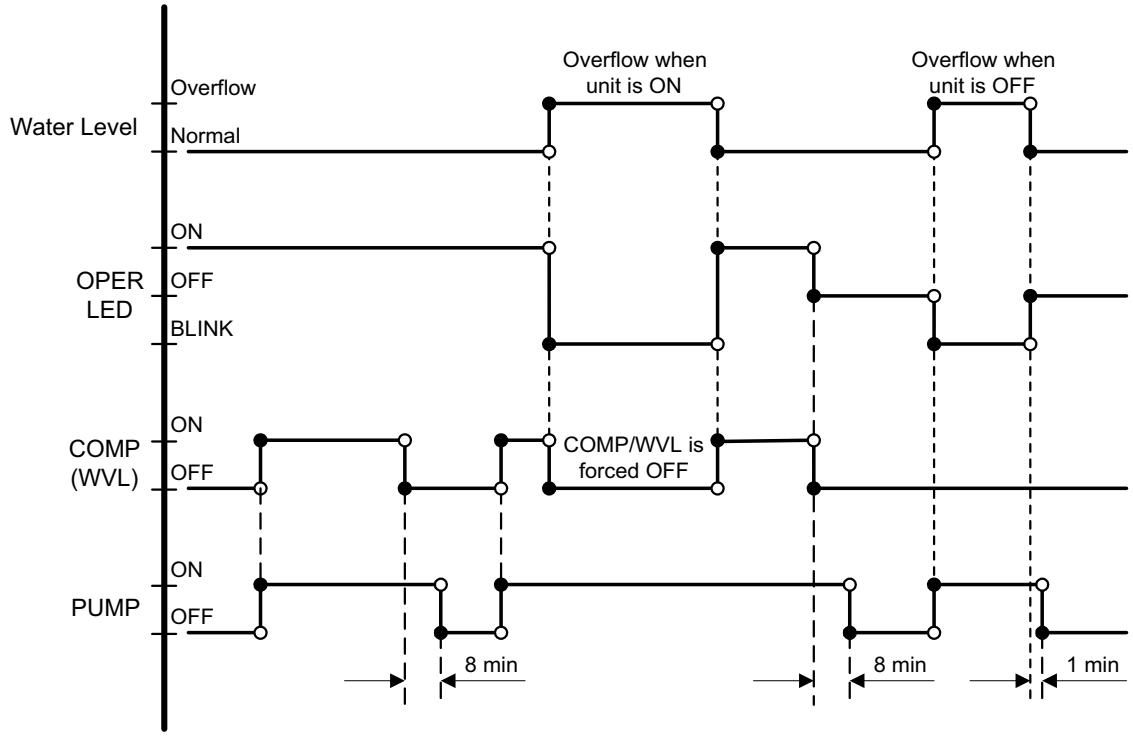


11.12.3 Condensation Pump (ECC/K model)

Mode: Cool, Dry, Auto
Temp: Selected desired temperature
Fan: Any
Timer: Any
I FEEL: Any

Control function:

Prevent Condensed water from Overflowing.



Notes:

1. The switch used for water level detection is closed under normal condition, and is open when water overflow.
2. For the NEC version of MCU, the "Over Flow" & “Normal” condition are indicated by logic “0” & “1” at the LEVEL4 input pin respectively.
3. For the Fujitsu version of MCU, the "Over Flow" & “Normal” condition are indicated by logic “1” & “0” at the LEVEL4 input pin respectively.
4. The “Overflow” condition can activate the water pump in SB and operating modes.

11.13 Forced Operation (Excluding PRX & PXD Models)

a. Forced operation allows units to start, stop and operate in cooling or heating in preset temp. according to the following table:

Forced Operation Mode	Pre-set Temp for : MBX, P2000, PX Models	Pre-set Temp for : FCD, RWK ,ELD, ECC, WAX, WNX, WMN Models
Cooling	20 ºC	22 ºC
Heating	25 ºC	28 ºC

NOTES

1. **While under the forced operation, the temperature compensation schedule is disabled.**
2. **The forced operation is activated when the mode button on the Display Board is used to switch the unit to COOL or HEAT mode.**
3. **The IFAN is always set to Autofan Speed in forced operation.**

Temp: Set – desired temperature selected

Fan: Any

Timer: Interact with Sleep Timer

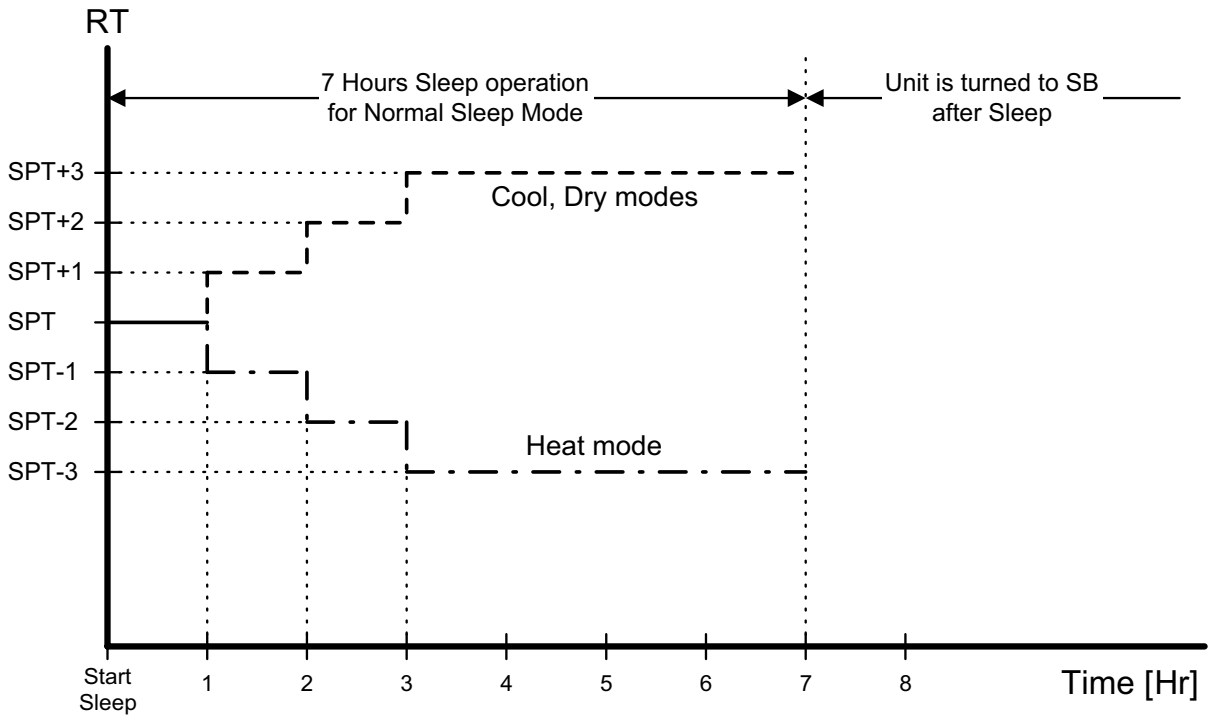
I-FEEL: ON or OFF

The Sleep mode is activated by using the SLEEP button on the R/C. In Sleep Mode, the unit will automatically adjust the SPT to turn up/down the room temperature (RT) gradually to provide maximum comfort for the sleeping user.

Sleep is treated as TIMER function. Therefore, the TIMER LED is activated similar to TIMER function.

11.14 SPT Adjustment in Sleep Mode

- In COOL, AUTO COOL or DRY modes, the SPT adjustment is positive (from 0 to +3°C).
- In HEAT or AUTO HEAT modes, the SPT adjustment is negative (from 0 to -3°C).
- In other modes, there is no SPT adjustment.
- The SPT adjustment is cancelled when the Sleep mode is cancelled.



NOTE

If OFF-timer is active, the unit may go to SB before or after 7 hours of sleep operation.

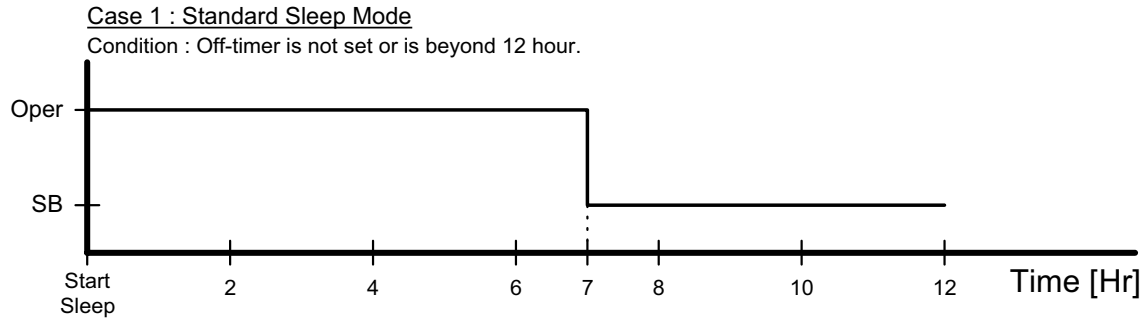
11.14.1 Time Adjustment in SLEEP Mode

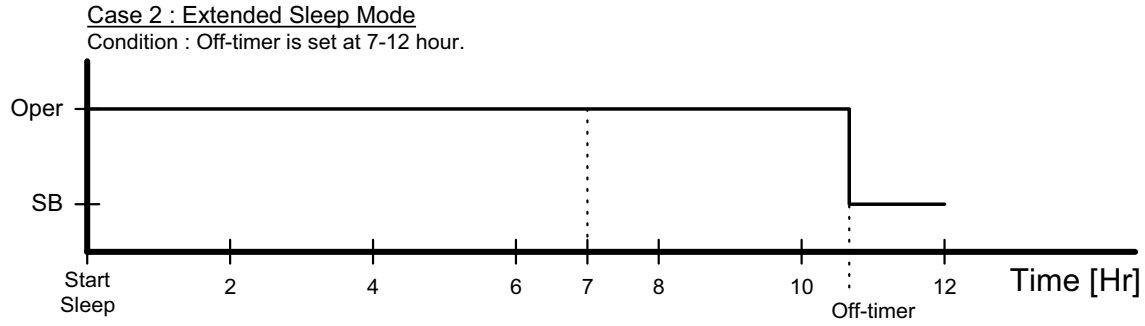
In 10V4, the user can make use of the Off-Timer to extend the Sleep Time from 7 hours to 12 hour (max). The operation of the new “Extended Sleep Mode” is illustrated by the graphs below.

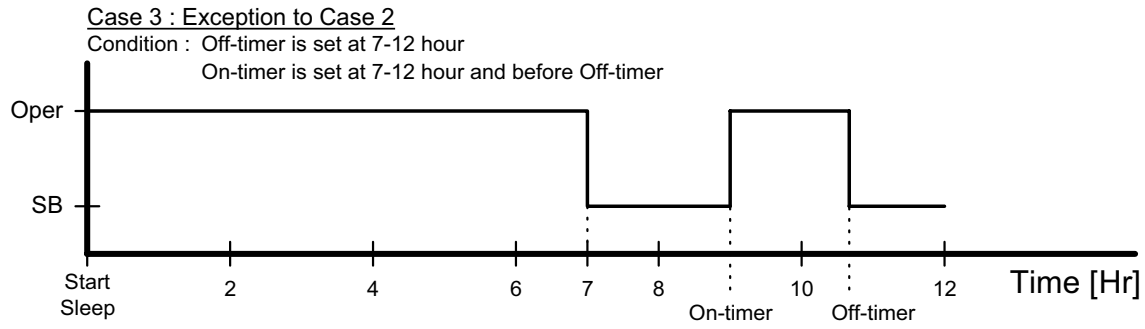
Case 1 is the Standard Sleep Mode, which is the only sleep mode in the previous version of MCU. The A/C unit simply works for 7 hours, then goes to SB.

Case 2 is the new Extended Sleep Mode. If an active Off-Timer is set to turn off the A/C between 7-12 hour, relative to the starting of Sleep, the Sleep time is extended. And, instead of going to SB at the 7th hour, the A/C will work until reaching the Off-time.

Case 3 is an exception to case 2. The Sleep Mode will not be extended to the Off-Time when the Off-Timer is preceded by an On-Timer, which is also between 7-12 hour.





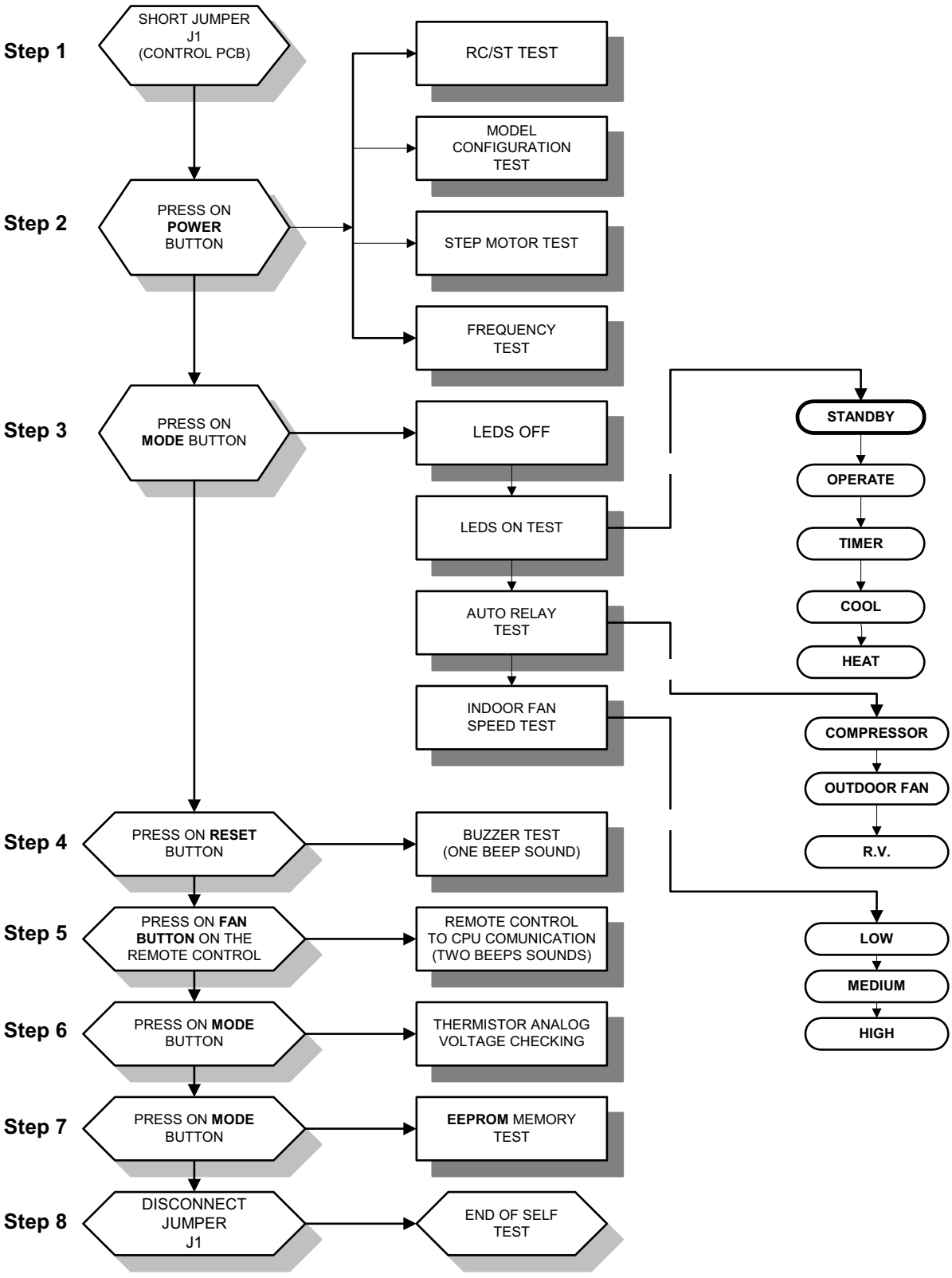


11.15 Controller Self-Test Procedure

11.15.1 By Shorting Test Jumper J1

SELF-TEST FLOW CHART

FOR CONTROLLER (VERSION 4V5 OR HIGHER)



11.15.2 By Remote Control Settings:

a. STEP 1: TURNING ON THE POWER.
Turn ON the power, make sure that the unit is in operation.

b. STEP 2 : ENABLE SELF-TEST MODE

1) Use the remote control to send the first settings to display / indoor unit HEAT mode, HIGH IFAN, set temperature to 16 ºC**,** no I-FEEL Sleep or any other timer settings are needed.

2) Cover the IR transmitter components in the remote control so that it will not transmit the signals to the indoor unit display.

3) Use the remote control to send the second settings to display / indoor unit COOL mode, LOW IFAN, no I-FEEL Sleep or any other timer settings.

4) Uncover the remote control IR transmitter and change the temperature settings. If the display/indoor unit receive the settings properly the following steps will start:

c. STEP 3: MODEL SETTING CONFIRMATION

1) The STAND-BY and COOL LEDS will indicate the operation mode as follows:

OPERATION MODE	STAND-BY LED	COOL LED
ST	ON	OFF
RC	OFF	OFF
SH	OFF	ON
RH	ON	ON

2) Testing the Model configuration. Selected by the COMP, STAND-BY, TIMER LEDS and FILTER will indicate the model configuration as follows (the relevant line for this manual is highlighted):

MODEL	COMP	OPERATE LED	TIMER LED	FILTER LED
WNG	ON	OFF	OFF	OFF
MBX	ON	OFF	OFF	ON
WNX	ON	OFF	ON	OFF
PRX	ON	ON	OFF	OFF
WMN1	ON	ON	OFF	ON
EMD/LS	ON	ON	ON	OFF
ECC-K	ON	ON	ON	ON
WMN 4	OFF	OFF	ON	OFF
PXD	OFF	OFF	ON	ON
WMN 2/WHX	OFF	ON	OFF	ON
WMN 3	OFF	ON	ON	ON

In this term the step motor will turn to HOME POSITION.

d. STEP 3: AUTO LED WALK TEST.

1) All the LEDS will turn OFF.

2) All the LEDS will turn ON for 1 second one by one in the following sequence:

STAND-BY ⇨ OPERATE ⇨ TIMER ⇨ FILTER ⇨ COOL ⇨ HEAT.

3) In PRX all the LEDS will turn ON for 1 second one by one in the following sequence : 18 °c ⇨ 20 °c ⇨ 22 °c ⇨ 24 °c ⇨ 26 °c ⇨ 28 °c ⇨ 30 °c ⇨ High IFAN ⇨ Auto IFAN ⇨ Med IFAN ⇨ Low IFAN ⇨ STAND-BY⇨ TIMER ⇨ FILTER ⇨COOL⇨ HEAT.

e. STEP 4: AUTO REALY WALK TEST:

All relays will energize one by one in the following sequence:

COMPRESSOR ⇨ OUTDOOR FAN⇨R. V. ⇨ HEATER 1 ⇨ HEATER 2 ⇨ INDOOR WATER PUMP ⇨ SWING or OUTDOOR WATER PUMP ⇨ INDOOR FAN: LOW ⇨ MID ⇨ HIGH.

When the relay walk test is completed, the next test will start automatically.

f. STEP 5: FREQUENCY TESTING:

If the frequency measuring process fails the COOL LED will turn ON. In order to move to the next step, press ON/OFF button on the remote control.

g. STEP 6: INPUT TEST.

The test purpose is to check the analog real time indicators (thermistors, LEVEL and clock) according to the table below.

LED Indicator	Condition for LED to be ON
STBY LED	Room thermistor ≠ 25°c
OPER LED	Indoor coil thermistor ≠ 25°c
TIMER LED	Outdoor coil thermistor ≠ 25°c
FILTER LED	Clock
COOL LED	LEVEL 2&3
HEAT LED	LEVEL 4

h. STEP 7: TIMING RESET TEST (WATCH DOG).

The test purpose is to verify that the CPU rise time after power failure is between 1 to 3 sec, test results are indicated on the LEDS : STAND-BY,OPER, TIMER and FILTER turning ON one by one.

The results of the test are coded as follows:

Pass condition:

1 sec - STAND-BY and OPER are turned ON

2 sec - STAND-BY, OPER and TIMER are turned ON

Fail condition:

0 sec - STAND-BY is turned ON

3 sec - STAND-BY, OPER, TIMER and FILTER are turned ON

When the timing reset test is completed, the next test will start automatically.

i. STEP 8: MEMORY TEST (EEPROM)

The test purpose is to check if the memory is functioning correctly. The test result is reported by using the STAND-BY and FILTER LEDS:

LED Indicator	Condition for LED to be ON
STAND-BY LED	Test passed
FILTER LED	Test failed

AT THIS POINT THE SELF-TEST IS COMPLETED.

In order to terminate Self-Test mode the User can change the unit setting from COOL Mode, LOW FAN to COOL Mode, MED FAN or to wait without using the remote control for 60 sec.

Values of Sensors Temperature VS. Voltage (DC)

Temp. (°C)	Voltage (V)	Temp. (°C)	Voltage (V)	Temp. (°C)	Voltage (V)	Temp. (°C)	Voltage (V)
-20	4,554	2	3.744	24	2.555	46	1.487
-19	4,529	3	3.695	25	2.5	47	1.447
-18	4,502	4	3.646	26	2.445	48	1.409
-17	4,475	5	3.595	27	2.391	49	1.371
-16	4.446	6	3.544	28	2.338	50	1.334
-15	4.417	7	3.492	29	2.284	51	1.298
-14	4.386	8	3.439	30	2.232	52	1.263
-13	4.354	9	3.386	31	2.18	53	1.228
-12	4.322	10	3.332	32	2.128	54	1.195
-11	4.287	11	3.278	33	2.077	55	1.162
-10	4.252	12	3.223	34	2.027	56	1.13
-9	4.216	13	3.168	35	1.978	57	1.099
-8	4.178	14	3.113	36	1.929	58	1.069
-7	4.14	15	3.058	37	1.881	59	1.04
-6	4.1	16	3.002	38	1.834	60	1.011
-5	4.059	17	2.946	39	1.798	61	0.983
-4	4.017	18	2.89	40	1.742	62	0.956
-3	3.974	19	2.833	41	1.698	63	0.929
-2	3.93	20	2.777	42	1.654	64	0.904
-1	3.885	21	2.722	43	1.611	65	0.879
0	3.839	22	2.666	44	1.569	66	0.854
1	3.792	23	2.61	45	1.527	67	0.831

11.16 System Diagnostics

Pressing Mode button for 5-10 seconds in SB or any other operation mode will activate the DIAGNOSTICS mode, acknowledged by 3 short beeps and lighting of COOL and HEAT LEDs.
In DIAGNOSTICS mode, system failures will be indicated by the blinking of HEAT & COOL LEDs.
The coding method is as follows:

- HEAT LED blinks 5 times in 5 seconds, and then turns off for the next 5 seconds.
- COOL LED blinks during the same 5 seconds according to the following table:

No.	Problem	1	2	3	4	5
1	RT1 is disconnected	○	●	●	●	●
2	RT1 is shorted	○	●	●	●	○
3	RV fault	○	●	●	○	●
4	RT2 is disconnected	●	○	●	●	●
5	RT2 is shorted	●	○	●	●	○
6	(Reserved)	●	○	●	○	●
7	RT2 temp reading doesn’t change	●	○	●	○	○
8	RT3 is disconnected	●	●	○	●	●
9	RT3 is shorted	●	●	○	●	○
10	(Reserved)	●	●	○	○	●
11	RT3 temp reading doesn’t change	●	●	○	○	○
12	RT2 & RT3 temp reading doesn’t change	●	○	○	○	○

LEGEND

○ - ON, ● - OFF

NOTES

1. **If faults occur in more than one thermistor (except case number 12 in table above), only one fault will be indicated according to the following order: RT3, RT2, RT1.**
2. **A/C will return to normal mode when sending a command by the R/C during system DIAGNOSTICS mode. If the command from the R/C contains a Group ID, the ID will become the new Group ID of the ELCON unit.**

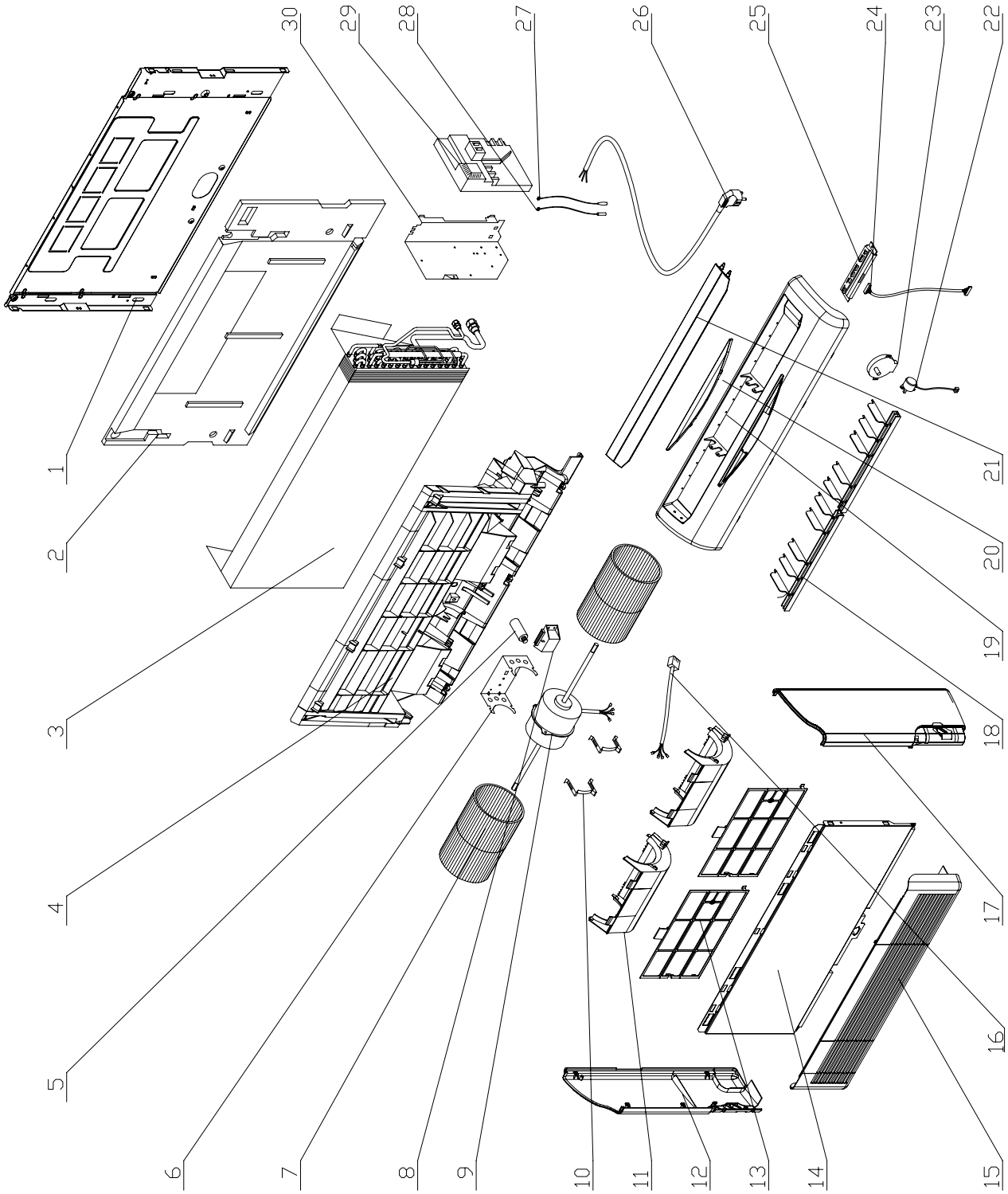
12. TROUBLESHOOTING

No.	SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
1	Power supply indicator (Red LED) does not light up.	No power supply.	Check power supply. If power supply is OK, check display and display wiring, if OK, replace PCB.
2	Unit does not respond to remote control command.	Remote control command did not reach the indoor unit.	Check remote control batteries. If batteries are OK, check display and display wiring, if OK, replace PCB.
3	Unit responds to remote control command but operate indicator (Green LED) does not light up.	Problem with display PCB.	Replace display PCB.
4	Indoor fan does not start (louvers are opened and Green LED lights up).	Unit in HEAT MODE and coil is still not warm.	Change to COOL MODE and check.
		Problem with PCB or capacitor.	Change to HIGH speed and check power supply to motor is higher than 130 VAC. If OK replace capacitor, if not OK replace controller.
5	Indoor fan works when unit is OFF, and indoor fan speed is not changed by remote control command.	PCB problem.	Replace controller.
6	Compressor does not start.	Electronics control problem or protection.	Perform diagnostics, and follow the actions described below.
7	Compressor stops during operation and Green LED remains on.	Electronic control or power supply problem.	Perform diagnostics, and follow the actions described below.
8	Compressor is ON but outdoor fan does not work.	Problem with outdoor electronics or outdoor fan capacitor.	Switch unit to COOL mode, HIGH speed with 16 degrees set point (summer) or HEAT mode high speed with 30 degrees set point (winter). Check power supply to motor is higher than 130 VAC. If OK replace capacitor, if not OK replace controller.
9	Unit works in wrong mode (cool instead of heat or heat instead of cool).	Electronics or power connection to RV.	Check RV power connections. If OK, check RV operation with direct 230 VAC power supply, if OK, replace outdoor controller.
10	All components are operating properly but no cooling or heating.	Refrigerant leak.	Check refrigeration system.

No.	SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
11	One of the protections is activated and compressor is stopped with no apparent reason.	Control problem or refrigeration system problem.	Perform diagnostics to detect active protection, and take action accordingly.
12	Compressor motor is noisy and no suction is present.	Wrong phase order to compressor.	Check compressor phase order.
13	Water leakage from indoor unit.	Indoor unit drainage tube is blocked.	Check and open drainage tube.
14	Freezing of outdoor unit in HEAT Mode and outdoor unit base is blocked with ice.		Connect base heater.
15	Unit operates with wrong fan speeds or wrong frequency.	Wrong jumper settings.	Perform diagnostics to obtain unit model or if operating by EEPROM parameters.
16	Filter LED comes ON after 512 hours of operation	Clogged air-filter	Replace air-filter. Press the RESET button.

13. EXPLODED VIEWS & SPARE PARTS LISTS

13.1 Indoor Unit: SX 9, 12, 15, 18



13.2 Indoor Unit: SX 9

No.	Item Code	Item Desc	Quantity
13	221555	FILTER (SMALL)	2
25	234213	DISPLAY BOX PXD EHK: 906-041-02	1
22	263034	SWING MOTOR	1
7	293321	CENTRIFUGAL FAN (SMALL)	2
1	307979	BACK PANEL (SMALL)	1
14	307981	FRONT PANEL (SMALL)	1
30	311036	STORM METAL PANEL	1
6	323425	MOTOR SUPPORT LENGTH 99	1
19	370281	AIR OUTLET FRAME (SMALL)	1
18	371257	VERTICAL LOUVER CONNECTOR	10
21	372338	HORIZONTAL LOUVER FRONT (SMALL)	1
21	372339	HORIZONTAL LOUVER BACK (SMALL)	1
11	372341	FAN COVER (SMALL)	2
17	373244	RIGHT PANEL	1
12	373245	Side Plate / Left	1
4	373247	FAN FRAME(SMALL)	1
20	375209-16	DISPLAY PANEL ASSY.---ELECTRA	1
2	382334	BASE EPS (SMALL)	1
24	391508	CABLE DISPLAY	1
23	436665	STEP MOTOR	1
28	438082	Thermistor Indoor	1
27	438413	ROOM Sensor	1
9	4520158	MOTOR PXD 9-12-15	1
16	4520429	MOTOR WIRE ---PXD	1
9	4520929	Motor Assy. for PXD9-12-15	1
10	4521029	CLIP	2
29	4524613	STORM DST-8 10V7_W 916-355-13 ENG. VER.	1
3	452731900	Evap. assy.	1
8	452816100	Transformer	1
29	452837700	STORM-1 (PXD & K)916-355-18	1
None	452837700	STORM-1 (PXD & K)916-355-18	1
None	452837700R	STORM-1 (PXD & K)916A355-18	1
5	455000600	Capacitor With Screw for fan motor	1
15	484001	AIR INLET ASSY (SMALL)	1

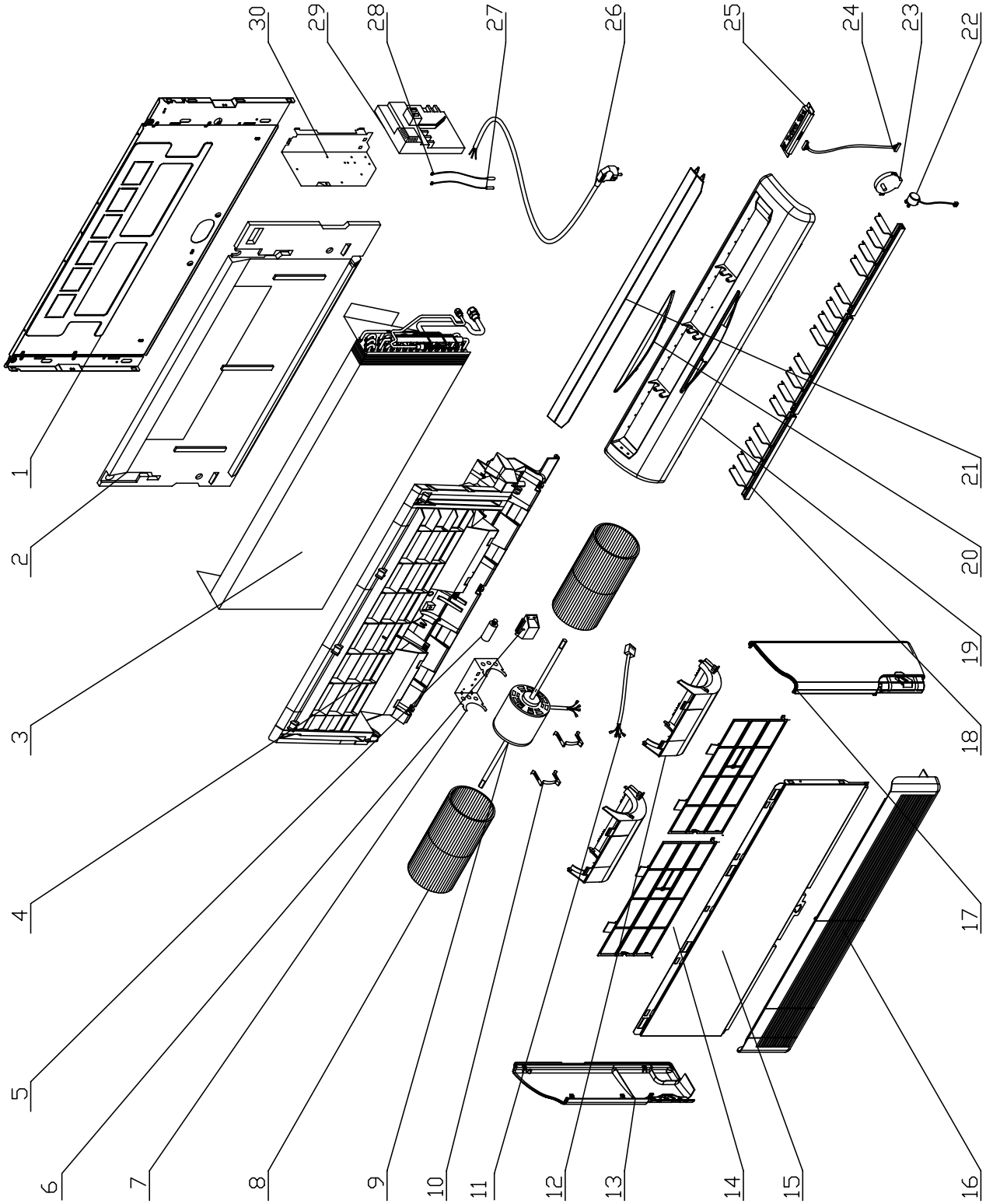
13.3 Indoor Unit: SX 12

No.	Item Code	Item Desc	Quantity
25	234213	DISPLAY BOX PXD EHK: 906-041-02	1
22	263034	SWING MOTOR	1
1	307979	BACK PANEL (SMALL)	1
14	307981	FRONT PANEL (SMALL)	1
6	323425	MOTOR SUPPORT LENGTH 99	1
19	370281	AIR OUTLET FRAME (SMALL)	1
21	372339	HORIZONTAL LOUVER BACK (SMALL)	1
17	373244	RIGHT PANEL	1
4	373247	FAN FRAME(SMALL)	1
9	4520929	Motor Assy. for PXD9-12-15	1
16	4520429	MOTOR WIRE ---PXD	1
9	4520158	MOTOR PXD 9-12-15	1
27	438413	ROOM Sensor	1
28	438082	Thermistor Indoor	1
23	436665	STEP MOTOR	1
24	391508	CABLE DISPLAY	1
2	382334	BASE EPS (SMALL)	1
20	375209-16	DISPLAY PANEL ASSY.---ELECTRA	1
15	484001	AIR INLET ASSY (SMALL)	1
5	455000600	Capacitor With Screw for fan motor	1
None	452837700R	STORM-1 (PXD & K)916A355-18	1
None	452837700	STORM-1 (PXD & K)916-355-18	1
29	452837700	STORM-1 (PXD & K)916-355-18	1
3	452791200	Evap. assy.	1
29	4524613	STORM DST-8 10V7_W 916-355-13 ENG. VER.	1
8	4520933	Auto-transformer	1
12	373245	Side Plate / Left	1
21	372338	HORIZONTAL LOUVER FRONT (SMALL)	1
30	311036	STORM METAL PANEL	1
18	371257	VERTICAL LOUVER CONNECTOR	10
13	221555	FILTER (SMALL)	2
7	293321	CENTRIFUGAL FAN (SMALL)	2
10	4521029	CLIP	2
11	372341	FAN COVER (SMALL)	2

13.4 Indoor Unit: SX 15

No.	Item Code	Item Desc	Quantity
13	221555	FILTER (SMALL)	2
25	234213	DISPLAY BOX PXD EHK: 906-041-02	1
22	263034	SWING MOTOR	1
7	293321	CENTRIFUGAL FAN (SMALL)	2
1	307979	BACK PANEL (SMALL)	1
14	307981	FRONT PANEL (SMALL)	1
30	311036	STORM METAL PANEL	1
6	323425	MOTOR SUPPORT LENGTH 99	1
19	370281	AIR OUTLET FRAME (SMALL)	1
18	371257	VERTICAL LOUVER CONNECTOR	10
21	372338	HORIZONTAL LOUVER FRONT (SMALL)	1
21	372339	HORIZONTAL LOUVER BACK (SMALL)	1
11	372341	FAN COVER (SMALL)	2
17	373244	RIGHT PANEL	1
12	373245	Side Plate / Left	1
4	373247	FAN FRAME(SMALL)	1
20	375209-16	DISPLAY PANEL ASSY.---ELECTRA	1
2	382334	BASE EPS (SMALL)	1
24	391508	CABLE DISPLAY	1
23	436665	STEP MOTOR	1
28	438082	Thermistor Indoor	1
27	438413	ROOM Sensor	1
10	4521029	CLIP	2
29	4524613	STORM DST-8 10V7_W 916-355-13 ENG. VER.	1
9	4524925	Motor Assy. for PXD15	1
3	452808900	Evap. assy.	1
29	452837700	STORM-1 (PXD & K)916-355-18	1
None	452837700	STORM-1 (PXD & K)916-355-18	1
None	452837700R	STORM-1 (PXD & K)916A355-18	1
5	455000600	Capacitor With Screw for fan motor	1
15	484001	AIR INLET ASSY (SMALL)	1

13.5 Indoor Unit: SX 18, 24, 30



13.6 Indoor Unit: SX 18

No.	Item Code	Item Desc	Quantity
14	221554	FILTER PXD (BIG)	2
25	234213	DISPLAY BOX PXD EHK: 906-041-02	1
22	263034	SWING MOTOR	1
8	293322	CENTRIFUGAL FAN (BIG)	2
1	307980	BACK PANEL £¨BIG£©	1
15	307982	FRONT PANEL (BIG)	1
30	311036	STORM METAL PANEL	1
7	323422	MOTOR SUPPORT LENGTH 132	1
19	370280	AIR OUTLET FRAME (BIG)	1
18	371257	VERTICAL LOUVER CONNECTOR	12
21	372336	HORIZONTAL LOUVER FRONT (BIG)	1
21	372337	HORIZONTAL LOUVER BACK (BIG)	1
12	372340	FAN COVER (BIG)	2
17	373244	RIGHT PANEL	1
13	373245	Side Plate / Left	1
4	373246	FAN FRAME (BIG)	1
20	375209-16	DISPLAY PANEL ASSY.---ELECTRA	1
2	382333	BASE EPS (BIG)	1
24	391508	CABLE DISPLAY	1
23	436665	STEP MOTOR	1
28	438082	Thermistor Indoor	1
27	438413	ROOM Sensor	1
9	4520159	MOTOR PXD 24-28	1
11	4520429	MOTOR WIRE ---PXD	1
9	4520931	Motor Assy. for PXD24-28	1
6	4520934	Auto-transformer	1
10	4521029	CLIP	2
29	4524613	STORM DST-8 10V7_W 916-355-13 ENG. VER.	1
3	4527244	Evaporator PXD18 R410A	1
29	452837700	STORM-1 (PXD & K)916-355-18	1
None	452837700	STORM-1 (PXD & K)916-355-18	1
None	452837700R	STORM-1 (PXD & K)916A355-18	1
5	455000604	Capacitor With Screw 1.5uF	1
16	484002	AIR INLET ASSY (BIG)	1

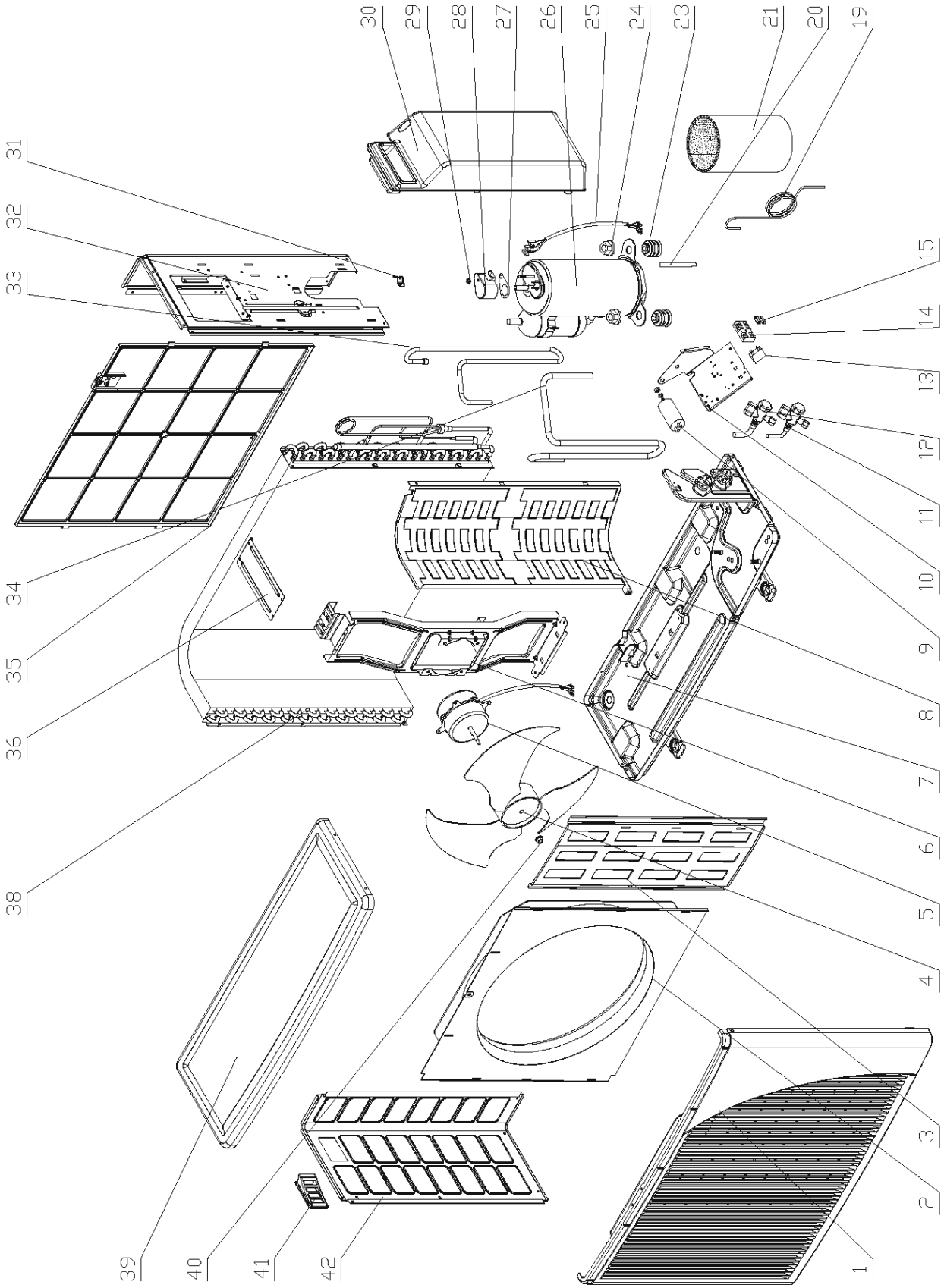
13.7 Indoor Unit: SX 24

No.	Item Code	Item Desc	Quantity
14	221554	FILTER PXD (BIG)	2
25	234213	DISPLAY BOX PXD EHK: 906-041-02	1
22	263034	SWING MOTOR	1
8	293322	CENTRIFUGAL FAN (BIG)	2
1	307980	BACK PANEL £¨BIG£©	1
15	307982	FRONT PANEL (BIG)	1
30	311036	STORM METAL PANEL	1
7	323422	MOTOR SUPPORT LENGTH 132	1
19	370280	AIR OUTLET FRAME (BIG)	1
18	371257	VERTICAL LOUVER CONNECTOR	12
21	372336	HORIZONTAL LOUVER FRONT (BIG)	1
21	372337	HORIZONTAL LOUVER BACK (BIG)	1
12	372340	FAN COVER (BIG)	2
17	373244	RIGHT PANEL	1
13	373245	Side Plate / Left	1
4	373246	FAN FRAME (BIG)	1
20	375209-16	DISPLAY PANEL ASSY.---ELECTRA	1
2	382333	BASE EPS (BIG)	1
24	391508	CABLE DISPLAY	1
23	436665	STEP MOTOR	1
28	438082	Thermistor Indoor	1
27	438413	ROOM Sensor	1
9	4520159	MOTOR PXD 24-28	1
11	4520429	MOTOR WIRE PXD	1
9	4520931	Motor Assy. for PXD24-28	1
6	4520934	Auto-transformer	1
10	4521029	CLIP	2
29	4524613	STORM DST-8 10V7_W 916-355-13 ENG. VER.	1
29	452837700	STORM-1 (PXD & K)916-355-18	1
None	452837700	STORM-1 (PXD & K)916-355-18	1
None	452837700R	STORM-1 (PXD & K)916A355-18	1
3	452907300	EVAPRATOR ASSY	1
5	455000602	Capacitor With Screw for fan motor	1
16	484002	AIR INLET ASSY (BIG)	1

13.8 Indoor Unit: SX 30

No.	Item Code	Item Desc	Quantity
13	221554	FILTER PXD (BIG)	2
25	234213	DISPLAY BOX PXD EHK: 906-041-02	1
22	263034	SWING MOTOR	1
7	293322	CENTRIFUGAL FAN (BIG)	2
1	307980	BACK PANEL £¨BIG£©	1
14	307982	FRONT PANEL (BIG)	1
30	311036	STORM METAL PANEL	1
6	323422	MOTOR SUPPORT LENGTH 132	1
18	370280	AIR OUTLET FRAME (BIG)	1
17	371257	VERTICAL LOUVER CONNECTOR	12
20	372336	HORIZONTAL LOUVER FRONT (BIG)	1
21	372337	HORIZONTAL LOUVER BACK (BIG)	1
11	372340	FAN COVER (BIG)	2
16	373244	RIGHT PANEL	1
12	373245	Side Plate / Left	1
4	373246	FAN FRAME (BIG)	1
19	375209-16	DISPLAY PANEL ASSY.---ELECTRA	1
2	382333	BASE EPS (BIG)	1
24	391508	CABLE DISPLAY	1
26	391726	Power Supply	1
23	436665	STEP MOTOR	1
27	438082	Thermistor Indoor	1
28	438413	ROOM Sensor	1
10	4520429	MOTOR WIRE ---PXD	1
8	4520932	Motor Assy. for PXD32	1
9	4521029	CLIP	2
29	452837700	STORM-1 (PXD & K)916-355-18	1
None	452837700	STORM-1 (PXD & K)916-355-18	1
None	452837700R	STORM-1 (PXD & K)916A355-18	1
3	453154800	Evaporator Assy.	1
5	455000602	Capacitor With Screw for fan motor	1
15	484002	AIR INLET ASSY (BIG)	1

13.9 Outdoor Unit: ONG 9, 12 ST



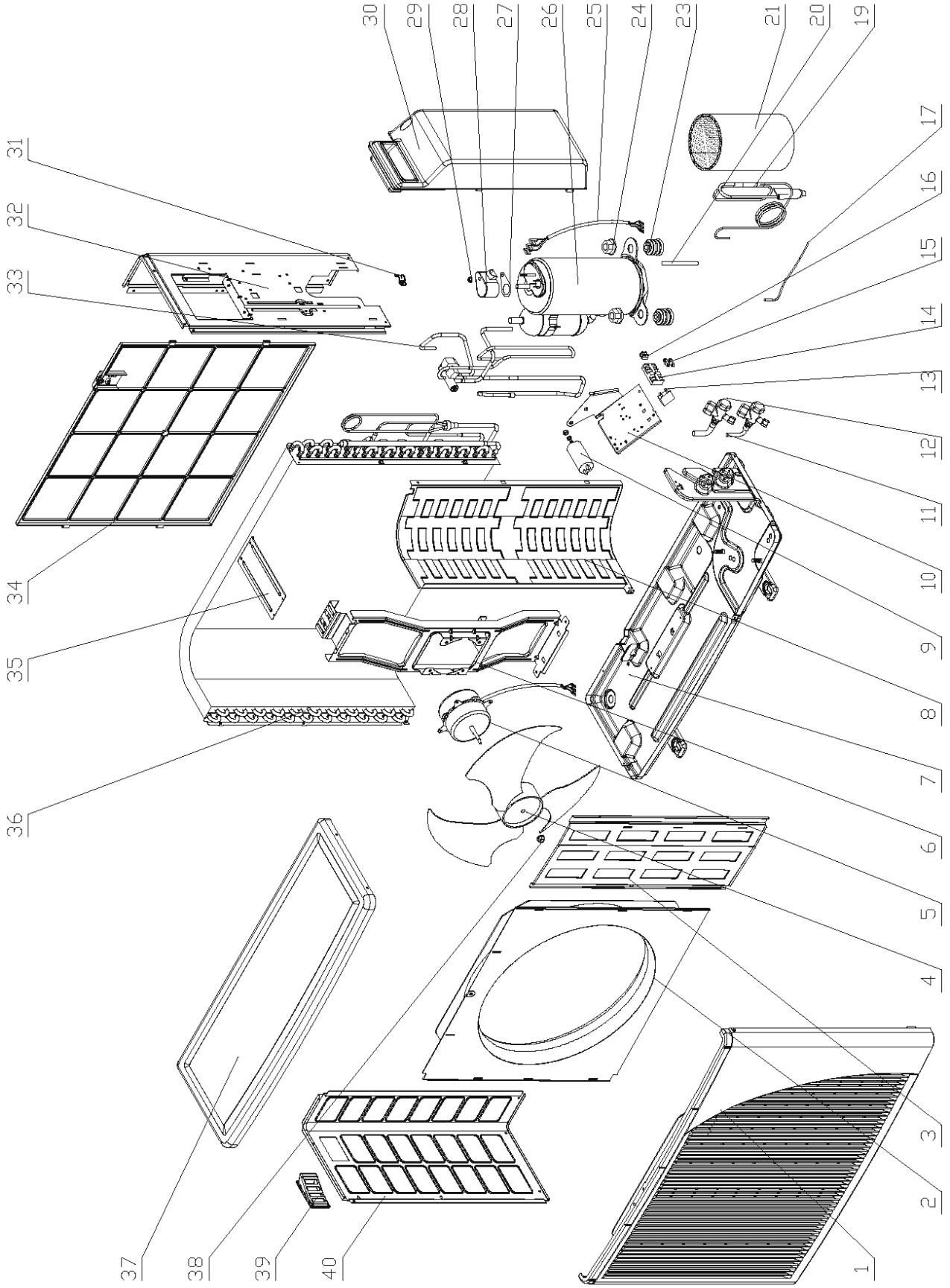
13.10 Outdoor Unit: ONG 9 ST

Item Code	Item Desc	Quantity	Drawing Number	Effective From	Effective To
433218	Front Panel A	1	1	05-Mar-04	Active
433219	Front Panel A1	1	1	05-Mar-04	05-Mar-04
433221	Air Inlet Ring-420	1	2	05-Mar-04	Active
433223	Painting Insulation Plate	1	3	05-Mar-04	Active
4519251	Axial Fan OD=400	1	4	05-Mar-04	Active
4519250	Fan Motor YDK30-6V	1	5	05-Mar-04	Active
433215	Motor Support	1	6	05-Mar-04	05-Mar-04
4527203	Motor Support	1	6	05-Mar-04	Active
4526747	Base Painting Assy.	1	7	05-Mar-04	Active
433217	Partition Plate	1	8	05-Mar-04	Active
455000503	Compressor Capacitor With Screw	1	9	05-Mar-04	Active
4519611	Electric Panel Painting Plate	1	10	05-Mar-04	Active
4524176	1/4 Liqiud Valve(R410A)	1	11	05-Mar-04	Active
4524177	3/8 Gas Valve(R410A)	1	12	05-Mar-04	Active
455000001	single patch Capacitor for fan	1	13	05-Mar-04	Active
4514588	5 Poles terminal block	1	14	05-Mar-04	Active
204107	Cable clip Nylon	1	15	05-Mar-04	Active
4527281	Capillary Assy	1	19	05-Mar-04	Active
4527362	Charge tube TP2 6.35x0.8	1	20	05-Mar-04	Active
452799601	Compressor Jacket ONG3-9	1	21	05-Mar-04	Active
4510677	Nut With Flange M8 -D=24	1	24	05-Mar-04	Active
4527008	Wire assy	1	25	05-Mar-04	Active
4524230	Compressor assy. GK113PAG	1	26	05-Mar-04	Active
4516826	Rubber washer	1	27	05-Mar-04	Active
4516825	Cover Terminal	1	28	05-Mar-04	Active
4514089	Nut hex	1	29	05-Mar-04	Active
433229	cover valve	1	30	05-Mar-04	Active
433234	Clamp	1	31	05-Mar-04	Active
4519606	Right side panel (painting plate)	1	32	05-Mar-04	Active
4527279	Discharge Tube Assy 2 £¨9ST)	1	33	05-Mar-04	Active
4527280	Suction Tube 1	1	34	05-Mar-04	Active
433228	Back Side Net	1	35	05-Mar-04	Active
433216	Bridge	1	36	05-Mar-04	Active
4527155	condensor Soldering assy	1	38	05-Mar-04	Active
4519614	Painting Top Cover	1	39	05-Mar-04	Active
4519300	Nut M5 L	1	40	05-Mar-04	Active
433225	Handle	1	41	05-Mar-04	Active
4519607	Left Side Panel Painting Plate	1	42	05-Mar-04	Active
4514091	Grommet	1	230	05-Mar-04	Active

13.11 Outdoor Unit: ONG 12 ST

Item Code	Item Desc	Quantity	Drawing Number	Effective From	Effective To
433218	Front Panel A	1	1	15-Nov-03	13-Jan-04
433219	Front Panel A1	1	1	13-Jan-04	Active
433221	Air Inlet Ring-420	1	2	15-Nov-03	Active
433223	Painting Insulation Plate	1	3	15-Nov-03	Active
4519251	Axial Fan OD=400	1	4	15-Nov-03	Active
4519692	Fan Motor (810rpm)	1	5	15-Nov-03	Active
433215	Motor Support	1	6	15-Nov-03	16-Feb-04
4527203	Motor Support	1	6	16-Feb-04	Active
4519601	Base Painting Assy.	1	7	15-Nov-03	15-Nov-03
4526747	Base Painting Assy.	1	7	15-Nov-03	16-Feb-04
452772500	Base Plate Painting Assy.	1	7	16-Feb-04	Active
433217	Partition Plate	1	8	15-Nov-03	Active
4517993	Cap. 35uF/450V	1	9	15-Nov-03	29-Dec-03
455000504	Compressor Capacitor With Screw	1	9	29-Dec-03	Active
4519611	Electric Panel Painting Plate	1	10	15-Nov-03	Active
4524176	1/4 Liqiud Valve(R410A)	1	11	15-Nov-03	Active
4524595	1/2 Gas Valve for ONG R410A	1	12	15-Nov-03	13-Jan-04
4524177	3/8 Gas Valve(R410A)	1	12	13-Jan-04	Active
4517990	Cap. 2uF/450V	1	13	15-Nov-03	08-Jan-04
455000001	single patch Capacitor for fan	1	130	08-Jan-04	09-Feb-04
455000108	Double patch Capacitor for fan	1	13	09-Feb-04	Active
4514588	5 Poles terminal block	1	14	15-Nov-03	Active
204107	Cable clip Nylon	1	15	15-Nov-03	Active
236179	2 Poles terminal block	1	16	15-Nov-03	16-Feb-04
4516637	Out sensor Black	1	17	15-Nov-03	16-Feb-04
4525210	Restrictor (031)	1	18	15-Nov-03	13-Jan-04
4524923	Capillary 2.6*1.6*800	1	19	15-Nov-03	13-Jan-04
4526848	Capillary Assy. (OD2.6xID1.6x1000)	1	19	13-Jan-04	Active
4525650	Charge tube	1	20	15-Nov-03	13-Jan-04
4527362	Charge tube TP2 ¦?6.35x0.8	1	20	13-Jan-04	Active
4519600	Compresssor Jacket	1	21	15-Nov-03	13-Jan-04
4527007	Comp. Jacket	1	21	13-Jan-04	16-Feb-04
4527058	Comp. Jacket	1	21	16-Feb-04	Active
4519610	Compressor Isolation. Top Cover	1	22	15-Nov-03	13-Jan-04
4514091	Grommet	3	23	15-Nov-03	15-Nov-03
4516357	Rubber Cushion 1K15910311	3	23	15-Nov-03	Active
4510677	Nut With Flange M8 -D=24	3	24	15-Nov-03	Active
4519987	Wire assy	1	25	15-Nov-03	13-Jan-04
4527008	Wire assy	1	25	13-Jan-04	16-Feb-04
4519987	Wire assy	1	25	16-Feb-04	Active
4524232	Compressor assy. GK151PAD	1	26	15-Nov-03	15-Nov-03
4526452	Comp. Assy GMCC PA145X2C-4FT	1	26	15-Nov-03	Active
4516359	Terminal Packing 1K14720130	1	27	15-Nov-03	Active
4516826	Rubber washer	1	27	15-Nov-03	15-Nov-03
4516358	Terminal Cover 1K14720012	1	28	15-Nov-03	Active
4516825	Cover Terminal	1	28	15-Nov-03	15-Nov-03
4514089	Nut hex	1	29	15-Nov-03	15-Nov-03
4516360	Terminal Nut 1K14300710	1	29	15-Nov-03	Active
433229	Valve Cover	1	30	15-Nov-03	Active
433234	Clamp	1	31	15-Nov-03	Active
4518950	Filter Drier BFK-053S	1	31	15-Nov-03	13-Jan-04
4519606	Right side panel (painting plate)	1	32	15-Nov-03	Active
4526790	Discharge Tube Assy.	1	33	15-Nov-03	Active
4525081	Suction Tube 12.7*0.8*1090	1	42	15-Nov-03	15-Nov-03
4526791	Suction Tube Assy	1	34	15-Nov-03	Active
433228	Back Side Net	1	35	15-Nov-03	Active
433216	Bridge	1	36	15-Nov-03	Active
433235	SPACER A 22*1	1	37	15-Nov-03	16-Feb-04
4525529	condensor Soldering assy	1	47	15-Nov-03	13-Jan-04
4526806	condensor Soldering assy	1	38	13-Jan-04	16-Feb-04
4526804	condensor Soldering assy	1	38	16-Feb-04	Active
4519614	Painting Top Cover	1	39	15-Nov-03	Active
4519300	Nut M5 L	1	40	15-Nov-03	Active
433225	Handle	1	41	15-Nov-03	Active
4519607	Left Side Panel Painting Plate	1	42	15-Nov-03	Active
4525080	Discharge Tube 9.53*0.8*470	1	43	15-Nov-03	15-Nov-03

13.12 Outdoor Unit: ONG 9, 12 RC



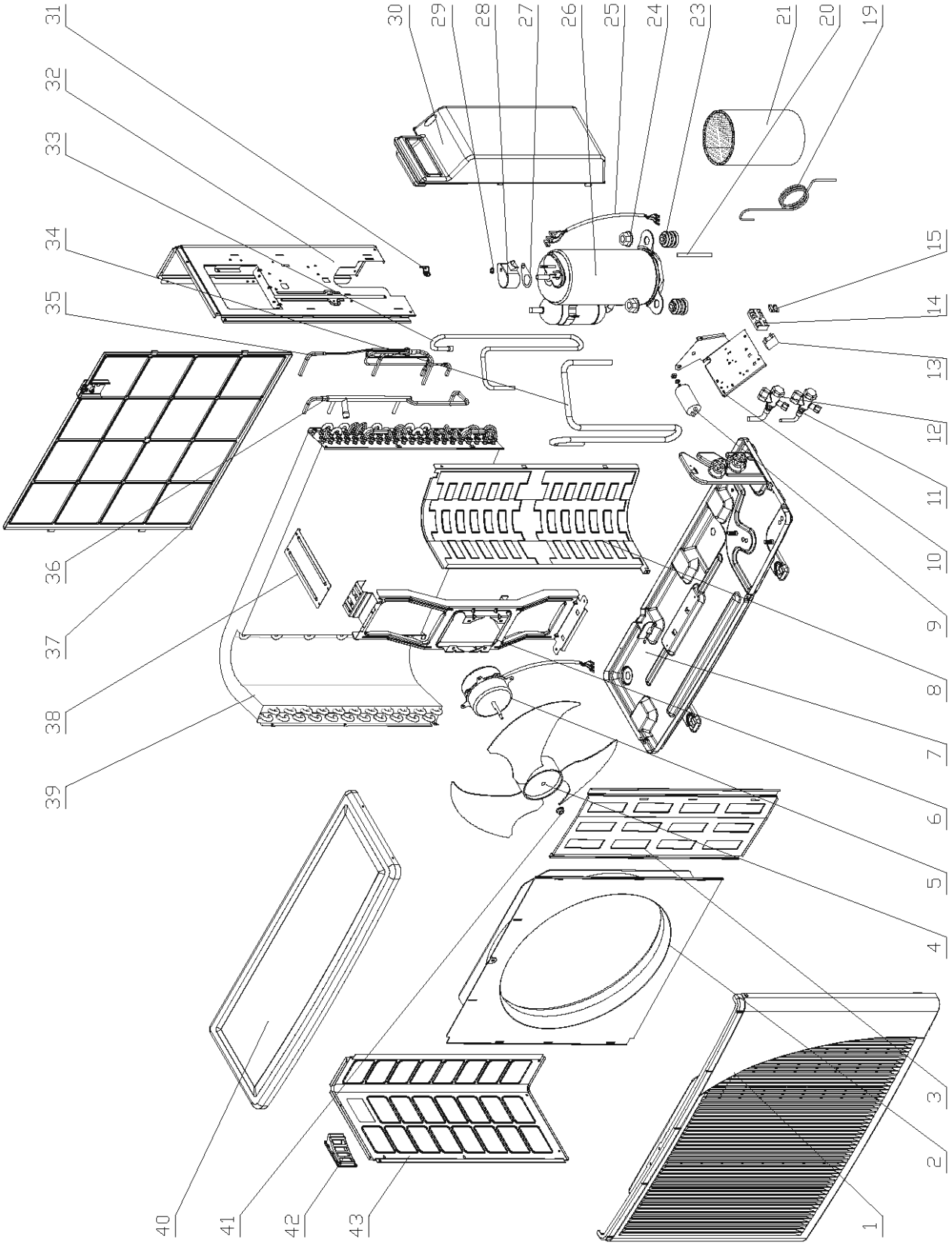
13.13 Outdoor Unit: ONG 9 RC

Item Code	Item Desc	Quantity	Drawing Number	Effective From	Effective To
433218	Front Panel A	1	1	05-Mar-04	Active
433219	Front Panel A1	1	1	05-Mar-04	05-Mar-04
433221	Air Inlet Ring-420	1	2	05-Mar-04	Active
433223	Painting Insulation Plate	1	3	05-Mar-04	Active
4519251	Axial Fan OD=400	1	4	05-Mar-04	Active
4519250	Fan Motor YDK30-6V	1	5	05-Mar-04	Active
4527203	Motor Support	1	6	05-Mar-04	Active
4526747	Base Painting Assy.	1	7	05-Mar-04	Active
433217	Partition Plate	1	8	05-Mar-04	Active
455000503	Compressor Capacitor With Screw	1	9	05-Mar-04	Active
4519611	Electric Panel Painting Plate	1	10	05-Mar-04	Active
4524176	1/4 Liqiud Valve(R410A)	1	11	05-Mar-04	Active
4524177	3/8 Gas Valve(R410A)	1	12	05-Mar-04	Active
455000108	Double patch Capacitor for fan	1	13	05-Mar-04	Active
4514588	5 Poles terminal block	1	14	05-Mar-04	Active
204107	Cable clip Nylon	1	15	05-Mar-04	Active
236179	2 Poles terminal block	1	16	05-Mar-04	Active
4516637	Out sensor Black	1	17	05-Mar-04	Active
4527444	Restrictor (029)	1	18	05-Mar-04	11-Mar-04
4527127	Capillary Assy	1	19	05-Mar-04	Active
4527362	Charge tube TP2 6.35x0.8	1	20	05-Mar-04	Active
452799601	Compressor Jacket ONG3-9	1	21	05-Mar-04	Active
4514091	Grommet	1	23	05-Mar-04	Active
4510677	Nut With Flange M8 -D=24	1	24	05-Mar-04	Active
4527008	Wire assy	1	25	05-Mar-04	Active
4524230	Compressor assy. GK113PAG	1	26	05-Mar-04	Active
4516826	Rubber washer	1	27	05-Mar-04	Active
4516825	Cover Terminal	1	28	05-Mar-04	Active
4514089	Nut hex	1	29	05-Mar-04	Active
433229	cover valve	1	30	05-Mar-04	Active
433234	Clamp	1	31	05-Mar-04	Active
4519606	Right side panel (painting plate)	1	32	05-Mar-04	Active
4527135	4-Way Valve & Tube Assy	1	33	05-Mar-04	Active
433228	Back Side Net	1	34	05-Mar-04	Active
433216	Bridge	1	35	05-Mar-04	Active
4527155	condensor Soldering assy	1	36	05-Mar-04	Active
4519614	Painting Top Cover	1	37	05-Mar-04	Active
4519300	Nut M5 L	1	38	05-Mar-04	Active
433225	Handle	1	39	05-Mar-04	Active
4519607	Left Side Panel Painting Plate	1	40	05-Mar-04	Active

13.14 Outdoor Unit: ONG 12 RC

Item Code	Item Desc	Quantity	Drawing Number	Effective From	Effective To
433218	Front Panel A	1	1	05-Mar-04	Active
433219	Front Panel A1	1	1	05-Mar-04	05-Mar-04
433221	Air Inlet Ring-420	1	2	05-Mar-04	Active
433223	Painting Insulation Plate	1	3	05-Mar-04	Active
4519251	Axial Fan OD=400	1	4	05-Mar-04	Active
4519692	Fan Motor (810rpm)	1	5	05-Mar-04	12-Mar-04
4526591	Motor YYK30Z-6	1	5	12-Mar-04	Active
4527203	Motor Support	1	6	05-Mar-04	Active
452772500	Base Plate Painting Assy.	1	7	05-Mar-04	12-Mar-04
4526747	Base Painting Assy.	1	7	12-Mar-04	Active
433217	Partition Plate	1	8	05-Mar-04	Active
455000504	Compressor Capacitor With Screw	1	9	05-Mar-04	12-Mar-04
455000502	Compressor Capacitor 35uF With Screw	1	9	12-Mar-04	Active
4519611	Electric Panel Painting Plate	1	10	05-Mar-04	Active
4524176	1/4 Liqiud Valve(R410A)	1	11	05-Mar-04	Active
4524177	3/8 Gas Valve(R410A)	1	12	05-Mar-04	Active
455000108	Double patch Capacitor for fan	1	13	05-Mar-04	12-Mar-04
455000000	single patch Capacitor for fan	1	13	12-Mar-04	Active
4514588	5 Poles terminal block	1	14	05-Mar-04	Active
204107	Cable clip Nylon	1	15	05-Mar-04	Active
236179	2 Poles terminal block	1	16	05-Mar-04	Active
4516637	Out sensor Black	1	17	05-Mar-04	Active
4526847	Valve-Capillary Assy	1	19	05-Mar-04	12-Mar-04
4526617	one way valve soldering	1	19	12-Mar-04	Active
4527362	Charge tube TP2	1	20	05-Mar-04	Active
4527058	Comp. Jacket	1	21	05-Mar-04	12-Mar-04
452799600	Compressor Jacket ONG3-7	1	21	12-Mar-04	Active
4516357	Rubber Cushion 1K15910311	3	23	05-Mar-04	12-Mar-04
4514091	Grommet	3	23	12-Mar-04	Active
4510677	Nut With Flange M8 -D=24	3	24	05-Mar-04	Active
4519987	Wire assy	1	25	05-Mar-04	12-Mar-04
4527375	Compressor Wire	1	25	12-Mar-04	Active
4526452	Comp. Assy GMCC PA145X2C-4FT	1	26	05-Mar-04	12-Mar-04
4526578	Compressor Assy. LG GK086P	1	26	12-Mar-04	Active
4526601	Compressor LG GK086P	1	26	12-Mar-04	12-Mar-04
4516359	Terminal Packing 1K14720130	1	27	05-Mar-04	12-Mar-04
4514088	Gasket	1	27	12-Mar-04	Active
4516358	Terminal Cover 1K14720012	1	28	05-Mar-04	12-Mar-04
4516824	Cover Terminal	1	28	12-Mar-04	Active
4516360	Terminal Nut 1K14300710	1	29	05-Mar-04	12-Mar-04
4514089	Nut hex	1	29	12-Mar-04	Active
433229	Valve Cover	1	30	05-Mar-04	Active
433234	Clamp	1	31	05-Mar-04	Active
4519606	Right side panel (painting plate)	1	32	05-Mar-04	Active
4526745	4-way Valve Welding Assy.	1	33	05-Mar-04	12-Mar-04
4526604	4-way Valve Welding Assy.	1	33	12-Mar-04	Active
4527308	PCB Support	1	34	11-Mar-04	Active
4526748	Low-Temp. Controller	1	35	11-Mar-04	Active
433228	Back Side Net	1	36	05-Mar-04	Active
433216	Bridge	1	37	05-Mar-04	Active
4526804	condensor Soldering assy	1	38	05-Mar-04	12-Mar-04
4526605	condensor Soldering assy	1	38	12-Mar-04	Active
4519614	Painting Top Cover	1	39	05-Mar-04	Active
4519300	Nut M5 L	1	40	05-Mar-04	Active
433225	Handle	1	41	05-Mar-04	Active
4519607	Left Side Panel Painting Plate	1	42	05-Mar-04	Active
4516114	2-W Valve coil	1	43	11-Mar-04	Active

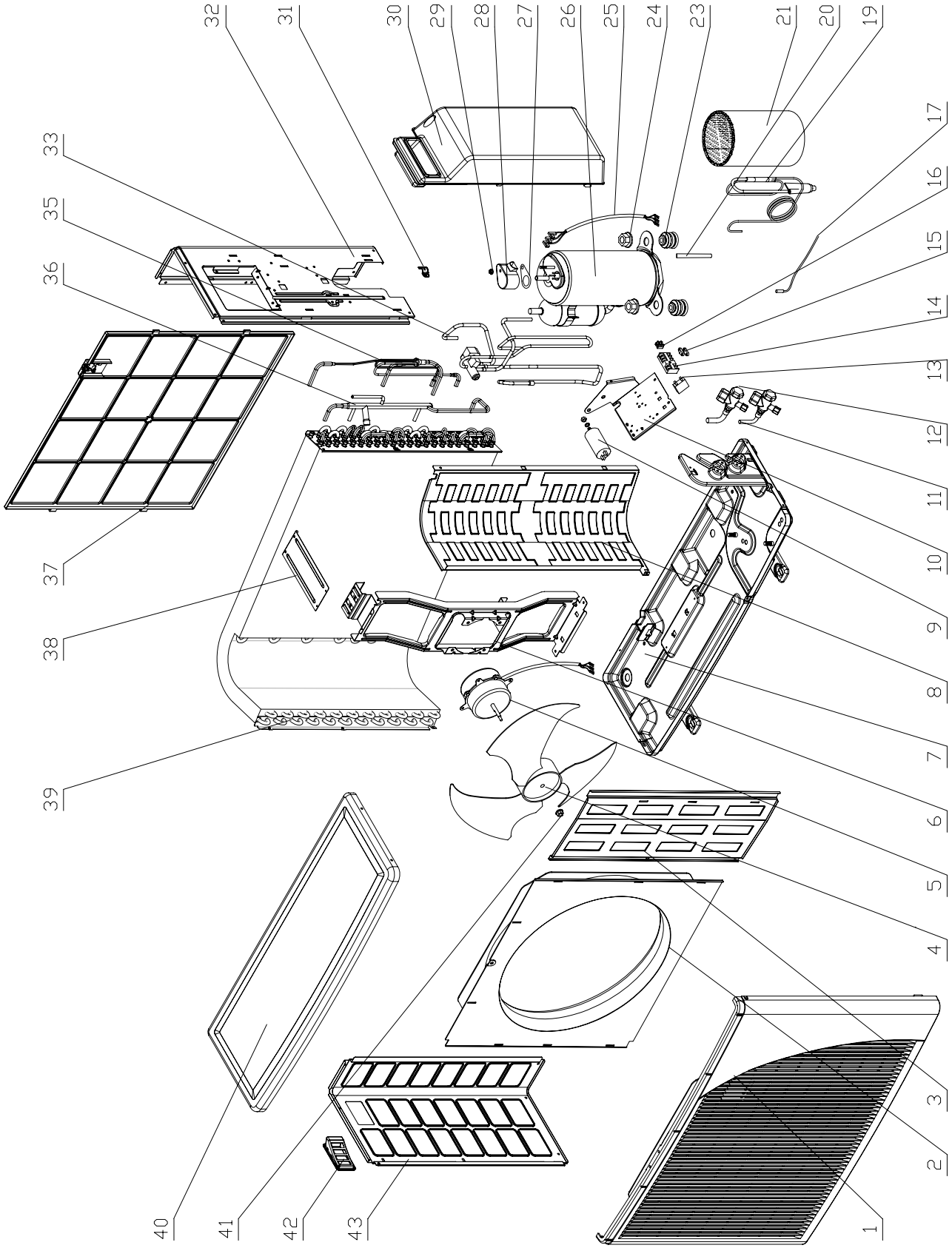
13.15 Outdoor Unit: ONG 14 ST



13.16 Outdoor Unit: ONG 14 ST

Item Code	Item Desc	Quantity	Drawing Number	Effective From	Effective To
433219	Front Panel A1	1	1	01-Mar-04	15-Mar-04
433218	Front Panel A	1	1	15-Mar-04	Active
433221	Air Inlet Ring-420	1	2	01-Mar-04	Active
433223	Painting Insulation Plate	1	3	01-Mar-04	Active
4519251	Axial Fan OD=400	1	4	01-Mar-04	Active
4520171	Fan Motor (910rpm)	1	5	01-Mar-04	Active
4527203	Motor Support	1	6	01-Mar-04	Active
4527255	Base Painting Assy.	1	7	01-Mar-04	Active
4527202	Partition Plate	1	8	01-Mar-04	Active
455000503	Compressor Capacitor With Screw	1	9	01-Mar-04	Active
4519611	Electric Panel Painting Plate	1	10	01-Mar-04	Active
4524176	1/4 Liqiud Valve(R410A)	1	11	01-Mar-04	Active
4524595	1/2 Gas Valve for ONG R410A	1	12	01-Mar-04	Active
455000108	Double patch Capacitor for fan	1	13	01-Mar-04	Active
4514588	5 Poles terminal block	1	14	01-Mar-04	Active
204107	Cable clip Nylon	1	15	01-Mar-04	Active
236179	2 Poles terminal block	1	16	01-Mar-04	Active
4516637	Out sensor Black	1	17	01-Mar-04	Active
4526918	Valve & Capillary Assy	1	19	01-Mar-04	01-Mar-04
4526919	Capillary Assy ID1.6x600	1	19	01-Mar-04	Active
4527362	Charge tube TP2 ¦?6.35x0.8	1	20	01-Mar-04	Active
4527058	Comp. Jacket	1	21	01-Mar-04	Active
4527287	Grommet	3	23	01-Mar-04	Active
4510677	Nut With Flange M8 -D=24	3	24	01-Mar-04	Active
4519987	Wire assy	1	25	01-Mar-04	Active
4526453	Compressor Assy. RN165VHSMT	1	26	01-Mar-04	Active
4527289	Terminal Packing	1	27	01-Mar-04	Active
4527285	Terminal Cover SC01D024	1	28	01-Mar-04	Active
4527286	Terminal Nut	1	29	01-Mar-04	Active
433229	valve cover	1	30	01-Mar-04	Active
433234	Clamp	1	31	01-Mar-04	Active
4519606	Right side panel (painting plate)	1	32	01-Mar-04	Active
4526794	4-way Valve Welding Assy.	1	33	01-Mar-04	01-Mar-04
4526797	Discharge Tube Assy.	1	33	01-Mar-04	Active
4526798	ASuction Tube A	1	34	01-Mar-04	Active
4526911	Distribution Capillary Assy	1	35	01-Mar-04	Active
4526903	Collection tube Assy	1	36	01-Mar-04	Active
433228	Back Side Net	1	37	01-Mar-04	Active
433216	Bridge	1	38	01-Mar-04	Active
4526808	condensor assy	1	39	01-Mar-04	01-Mar-04
4526809	condensor assy	1	39	01-Mar-04	25-Aug-04
4526796	condensor Soldering assy	1	39	25-Aug-04	Active
4519614	Painting Top Cover	1	40	01-Mar-04	Active
4519300	Nut M5 L	1	41	01-Mar-04	Active
433225	Handle	1	42	01-Mar-04	Active
4519607	Left Side Panel Painting Plate	1	43	01-Mar-04	Active

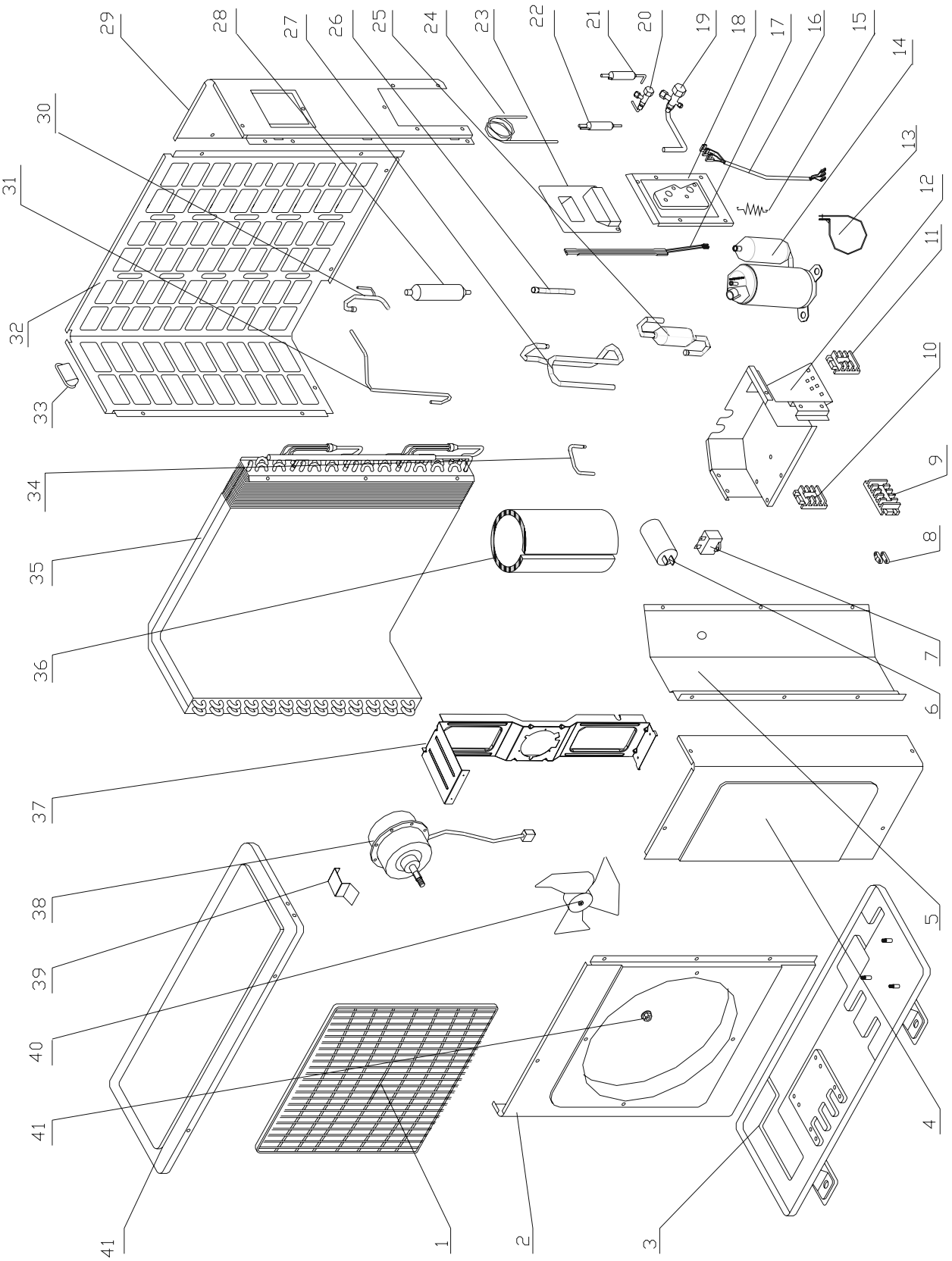
13.17 Outdoor Unit: ONG 14 RC



13.18 Outdoor Unit: ONG 14 RC

No.	Item Code	Item Desc	Qty
1	433219	Front Panel A1	1
1	433218	Front Panel A	1
2	433221	Air Inlet Ring-420	1
3	433223	Painting Insulation Plate	1
4	4519251	Axial Fan OD=400	1
5	4519692	Fan Motor (810rpm)	1
5	4520171	Fan Motor (910rpm)	1
6	4527203	Motor Support	1
7	452772500	Base Plate Painting Assy.	1
7	4527255	Base Painting Assy.	1
8	433217	Partition Plate	1
8	4527202	Partition Plate	1
9	455000504	Compressor Capacitor With Screw	1
9	455000503	Compressor Capacitor With Screw	1
10	4519611	Electric Panel Painting Plate	1
10	453013500	Electric Panel Painting Plate	1
11	4524176	1/4 Liqiud Valve(R410A)	1
12	4524177	3/8 Gas Valve(R410A)	1
12	4524595	1/2 Gas Valve for ONG R410A	1
13	455000108	Double patch Capacitor for fan	1
14	4514588	5 Poles terminal block	1
15	204107	Cable clip Nylon	1
16	236179	2 Poles terminal block	1
17	4516637	Out sensor Black	1
19	4526847	Valve-Capillary Assy	1
19	4526918	Valve & Capillary Assy	1
20	4527362	Charge tube TP2 ¦?6.35x0.8	1
21	4527058	Comp. Jacket	1
23	4516357	Rubber Cushion 1K15910311	3
23	4527287	Grommet	3
24	4510677	Nut With Flange M8 -D=24	3
25	4519987	Wire assy	1
26	4526452	Comp. Assy GMCC PA145X2C-4FT	1
26	4526453	Compressor Assy. RN165VHSMT	1
27	4516359	Terminal Packing 1K14720130	1
27	4527289	Terminal Packing	1
28	4516358	Terminal Cover 1K14720012	1
28	4527285	Terminal Cover SC01D024	1
29	4516360	Terminal Nut 1K14300710	1
29	4527286	Terminal Nut	1
30	433229	Valve Cover	1
31	433234	Clamp	1
32	4519606	Right side panel (painting plate)	1
33	4526745	4-way Valve Welding Assy.	1
33	4526794	4-way Valve Welding Assy.	1
35	4526911	Distribution Capillary Assy	1
36	4526903	Collection tube Assy	1
37	433228	Back Side Net	1
38	433216	Bridge	1
38	4526804	condensor Soldering assy	1
38	4526298	Bridge	1
39	4526808	condensor assy	1
39	4526793	condensor Soldering assy	1
40	4519614	Painting Top Cover	1
41	4519300	Nut M5 L	1
42	433225	Handle	1
43	4519607	Left Side Panel Painting Plate	1

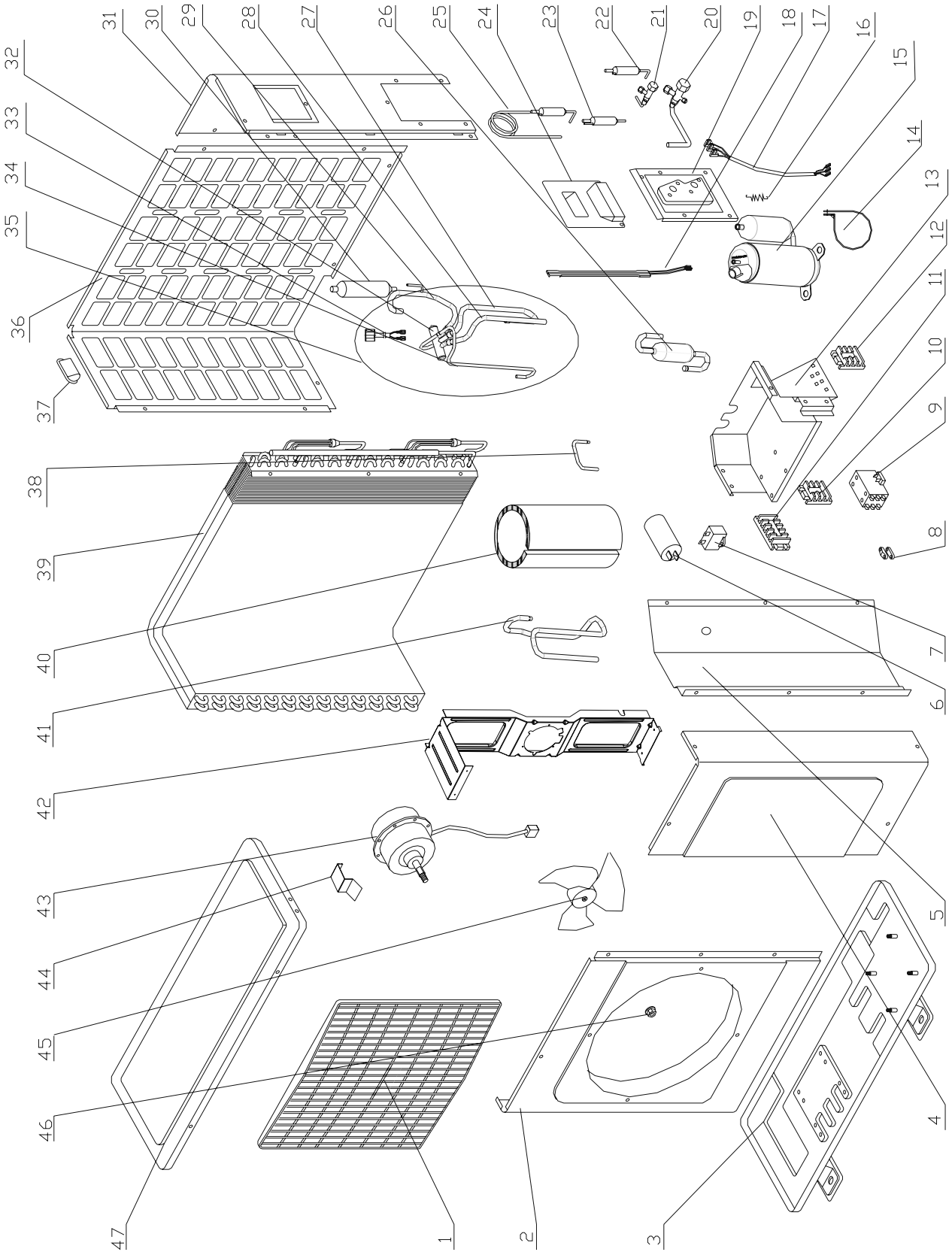
13.19 Outdoor Unit: GC 18 ST



13.20 Indoor Unit: GC 18 ST

NO.	Part No.	Description	Quantity
1	4517144	FAN COVER PP+UV	1
2	452795700	PAINTED LEFT CABINET ASSY	1
3	452989200	Base welding plate assy.	1
4	4516786	PAINTED RIGHT CABINET ASSY	1
5	4516985	Partition Plate	1
6	455000506	Compressor Capacitor With Screw 45uF (CBB65)	1
7	455000104	Double patch Capacitor for fan motor 4uF (CBB61S)	1
8	204107	Cable clip Nylon	2
9	4521744	3 Poles Terminal Block (4mm2)	1
10	4522469	4 LEVEL TERMINAL BLOCK	1
11	4521733	3 Poles Terminal Block (6mm2)	1
12	4521340	Controller Box	1
13	4525427	Clip for capacitance(d=50)	1
14	453089900	Compressor Assy.PA200X2CS-4KU1	1
15	4519000	Spring of compressor heater	1
16	4517345	COMPRESSOR WIRE ASSY. 2.5mm2	1
17	4526922	heater for compressor	1
18	4516766	PAINTED VALVE PLATE ASSY	1
19	4526530	LOW PRESS VALVE (R410A)	1
20	4526531	High press valve(R410A)	1
21	4526931	filter welding assy. 2	1
22	4526839	filter welding assy.	1
23	4523145	R.lifter	1
24	452821900	Capillary assy. for cooling	1
25	4523338	Accumulator assy.	1
26	452977200	Low pressure pipe	1
27	452976200	Suction pipe 1	1
28	4526291	Muffler	1
29	4525938	PAINTED RIGHT-BACK CABINET ASSY	1
30	452977000	Condenser pipe assy.	1
31	452976800	Discharge pipe 2	1
32	4517028	PAINTED LEFT-BACK GRILL	1
33	4516758	SMALL HANDLE	1
34	452976000	Discharge pipe 1	1
35	452821300	Condenser-Distributing Soldering Assy.GC-18ST R410A	1
36	452988800	Insulation for compressor PA215/240	1
37	4526509	MOTOR BRAKECT (new)	1
38	4526864	motor YYK85E-6	1
39	4526585	connect for motor backet	1
40	4526510	FAN D=460mm (3 blade)	1
41	4523141	Hexagon locked nut M10	1
42	4516788	PAINTED TOP COVER ASSY	1

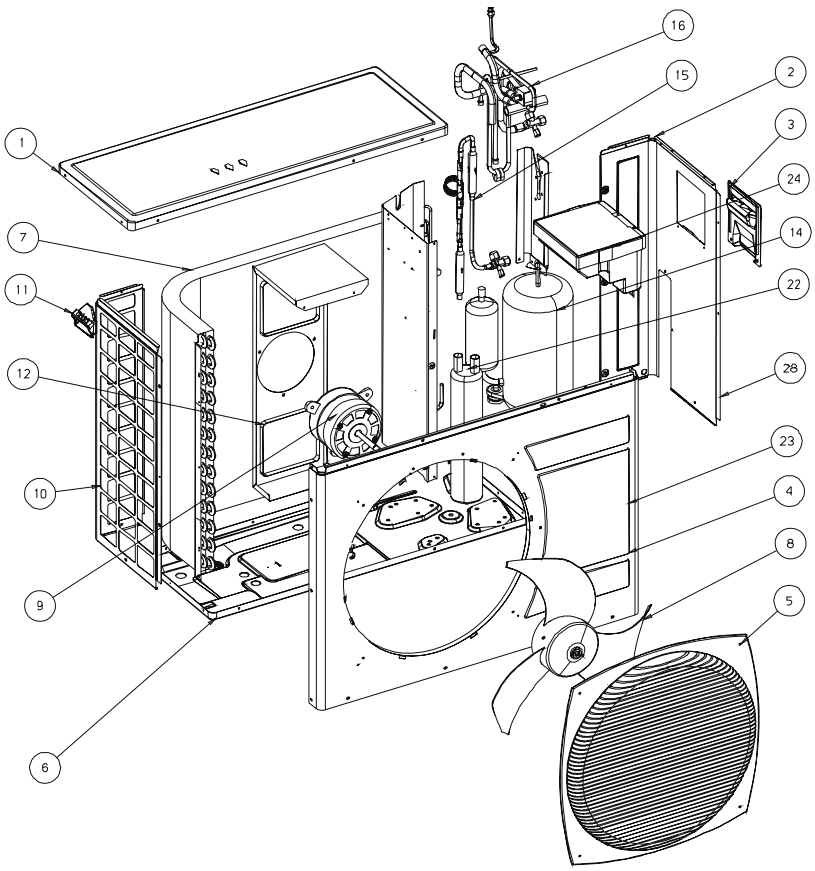
13.21 Outdoor Unit: GC 18 RC

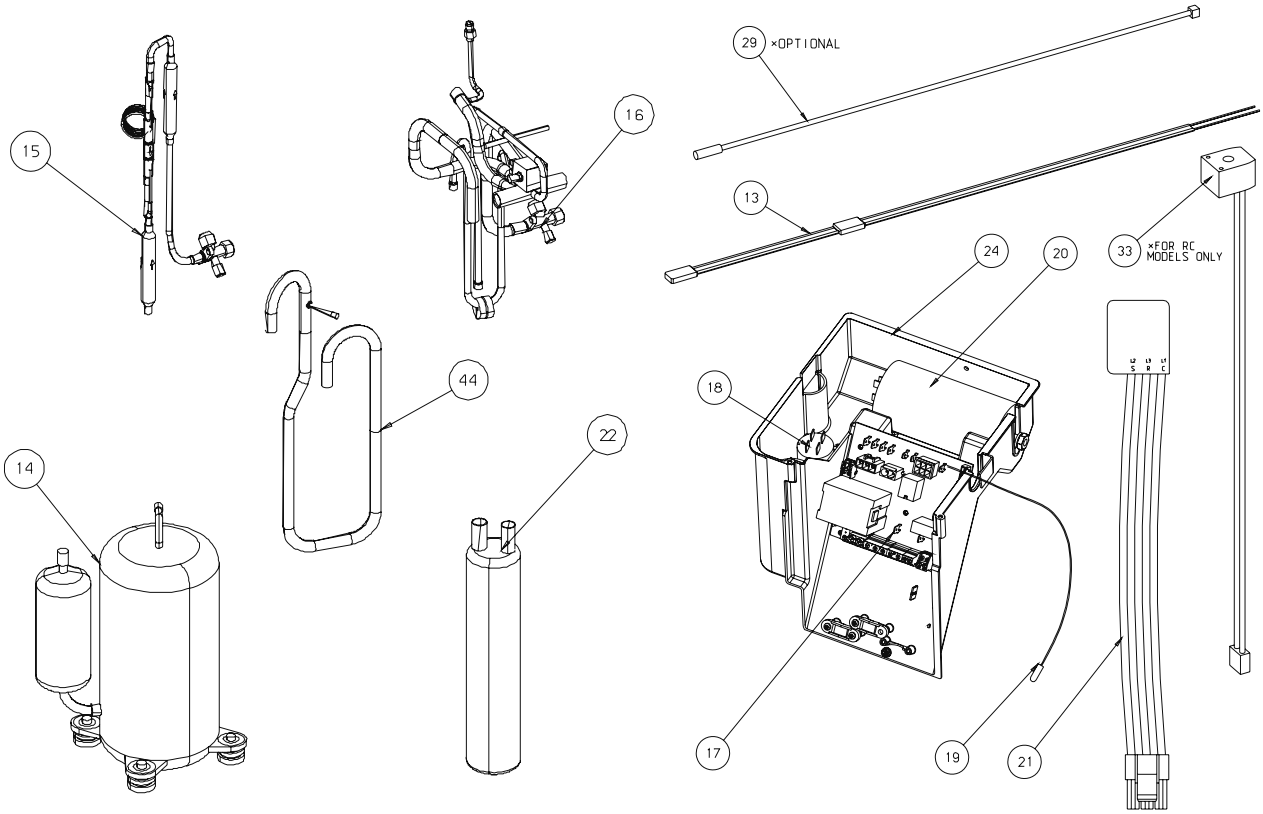


13.22 Outdoor Unit: GC 18 RC

NO.	Part No.	Description	Quantity
1	4517144	COVER PP+UV	1
2	452795700	PAINTED LEFT CABINET ASSY	1
3	452989200	Base welding plate assy.	1
4	4516786	PAINTED RIGHT CABINET ASSY	1
5	4516985	Partition Plate	1
6	455000506	Compressor Capacitor With Screw 45uF (CBB65)	1
7	455000104	Double patch Capacitor for fan motor 4uF (CBB61S)	1
8	204107	Cable clip Nylon	2
9	4524907	contactor (CJX9B-25S/01)	1
10	4521744	3 Poles Terminal Block (4mm2)	1
11	4522469	4 LEVEL TERMINAL BLOCK	1
12	4521733	3 Poles Terminal Block (6mm2)	1
13	4521340	Controller Box	1
14	4525427	Clip for capacitance(d=50)	1
15	453089900	Compressor Assy.PA200X2CS-4KU1	1
16	4519000	Spring of compressor heater	1
17	4517345	COMPRESSOR WIRE ASSY. 2.5mm2	1
18	4526922	Heater for compressor	1
19	4516766	PAINTED VALVE PLATE ASSY	1
20	4526530	LOW PRESS VALVE (R410A)	1
21	4526531	High press valve(R410A)	1
22	4526931	filter welding assy. 2	1
23	4526839	filter welding assy.	1
24	4523145	R.lifter	1
25	4526840	Single-way welding assy.	1
26	4523338	Accumulator assy.	1
27	452976500	Suction pipe 2	1
28	452976600	Low pressure pipe	1
29	452976400	Condenser pipe assy.	1
30	4526291	Muffler	1
31	4525938	PAINTED RIGHT-BACK CABINET ASSY	1
32	4526522	FOUR-WAY VALVE R410A	1
33	4526589	4-Way Valve Coil FOR R410A	1
34	452976100	Discharge pipe 2	1
35	452987800	4-way welding assy. for GC18RC R410A PA200	1
36	4517028	PAINTED LEFT-BACK GRILL	1
37	4516758	SMALL HANDLE	1
38	452976000	Discharge pipe 1	1
39	452796500	Condenser-Distributing Soldering Assy.GC-18RC R410A	1
40	452988800	Insulation for compressor PA215/240	1
41	452976200	Suction pipe 1	1
42	4526509	MOTOR BRAKECT (new)	1
43	4526862	motor YYK85E-6B for GC18RC	1
44	4526585	connect for motor backet	1
45	4526510	FAN D=460mm (3 blade)	1
46	4523141	M10 Hexagon locked nut M10	1
47	4516788	PAINTED TOP COVER ASSY	1

13.23 Outdoor Unit: OU7-24 RC 1PH

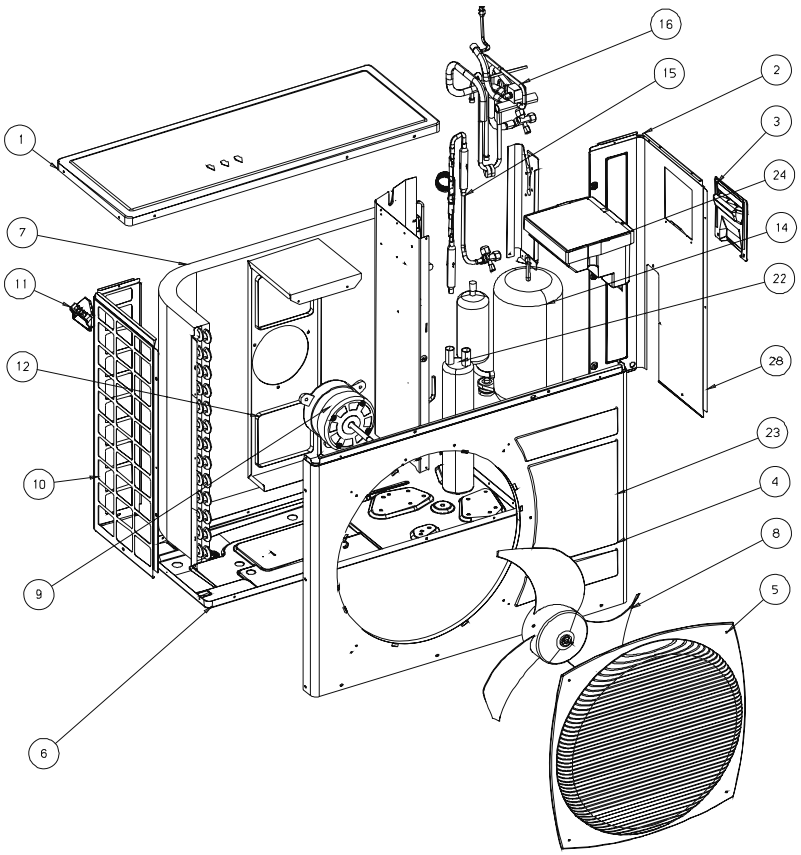


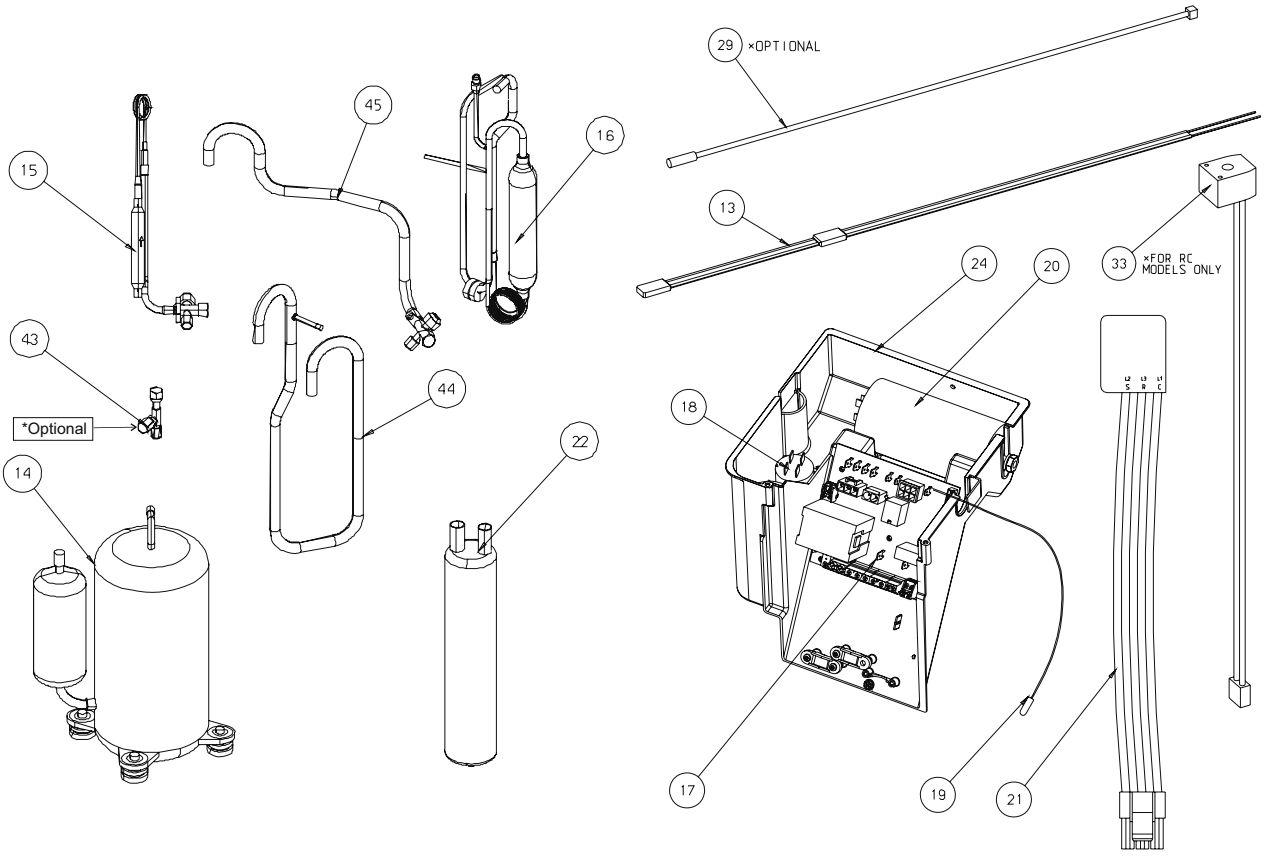


13.24 Outdoor Unit: OU7-24 RC 1PH

No.	SP No.	Part No.	Description	Qty
1	13	190443	HEATER CRANKCASE MITSUBISHI CO	1
2	22	402283	SUCTION ACCUMULATOR 3"x5/8" 3.	1
3	17	402495	BOARD TPHN 5B	1
4	7	433285	COIL OU7-24 HDR	1
5	15	433288	CAPILLARY ASSY OU7-24 R410A	1
6	16	433291	TUBING ASSY OU7 R410A	1
7	14	433293	COMPRESSOR NN27VBAMT	1
8	6	433294	NEW BASE ASSY OU 2005 EXPORT	1
9	44	433816	SUCTION ASSY OU7 R410A	1
10	9	434062	MOTOR 86W,2S,OU7-24	1
11	19	434716	THERMISTOR+CAP WTH CONNECTOR L	1
12	3	436357	SMALL ELECTRICAL COVER OU	1
13	11	436358	OU LEADING HANDLE	1
14	1	437045	UPPER COVER EL13 OU LARGE	1
15	5	437091	OU SQUARE FAN GUARD	1
16	24	437229	ELECTRICAL BOX TPHN	1
17	21	437274	COMPRESOR WIRING OU7/8-1PH MIT	1
18	4	439329	FRONT COVER/COLLECTOR OU7-35/9	1
19	12	439342	MOTOR SUPPORT OU7	1
20	18	442007	CAPACITOR 6mF 400V P1/P2	1
21	20	442016	CAPACITOR 55mF 400V P1/P2	1
22	33	442466	VALVE COIL L700 MOLEX-SANHUA	1
23	8	4529604	AXIAL FAN D493*143	1

13.25 Outdoor Unit: OU7-24 ST 1PH

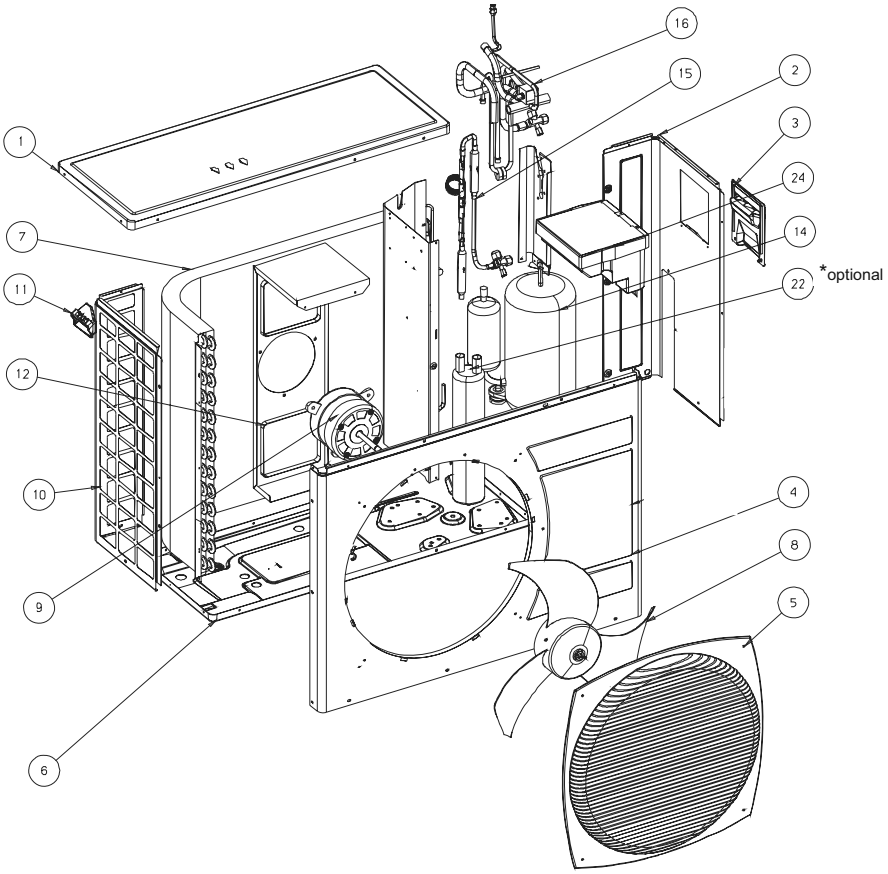


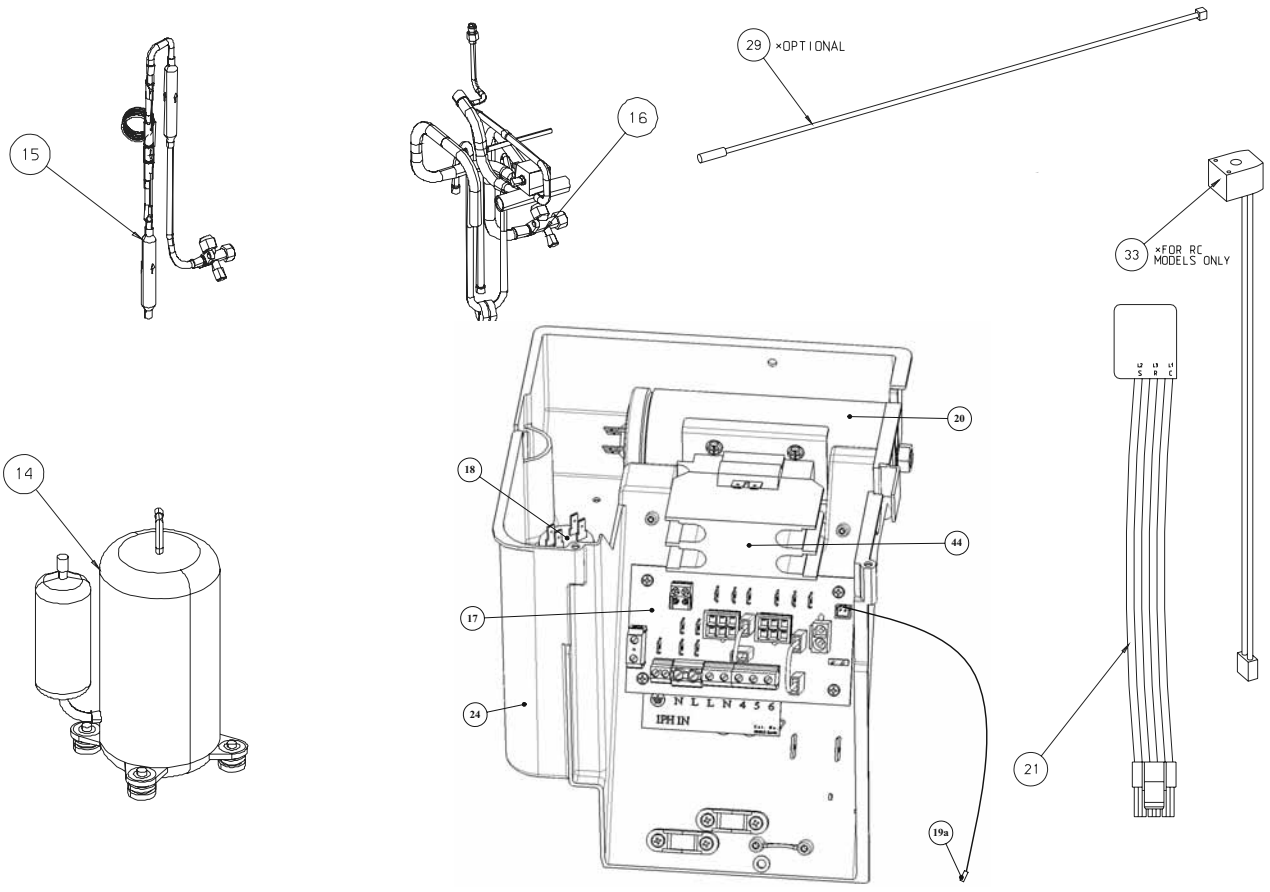


13.26 Outdoor Unit: OU7-24 ST 1PH

No.	SP No.	Part No.	Description	Qty
1	13	190443	HEATER CRANKCASE MITSUBISHI CO	1
2	22	402283	SUCTION ACCUMULATOR 3"x5/8" 3.	1
3	17	402495	BOARD TPHN 5B	1
4	14	433293	COMPRESSOR NN27VBAMT	1
5	6	433705	NEW BASE ASSY OU 2005 LOCAL	1
6	44	433816	SUCTION ASSY OU7 R410A	1
7	16	433817	TUBING ASSY OU7 ST R410A	1
8	15	433845	CAPILLARY ASSY OU7-24 ST R410A	1
9	7	433846	COIL OU7-24 ST	1
10	45	433847	GAS VAVE ASSY OU7 ST R410A	1
11	9	434062	MOTOR 86W,2S,OU7-24	1
12	19	434716	THERMISTOR+CAP WTH CONNECTOR L	1
13	3	436357	SMALL ELECTRICAL COVER OU	1
14	11	436358	OU LEADING HANDLE	1
15	1	437045	UPPER COVER EL13 OU LARGE	1
16	5	437091	OU SQUARE FAN GUARD	1
17	24	437229	ELECTRICAL BOX TPHN	1
18	21	437274	COMPRESOR WIRING OU7/8-1PH MIT	1
19	4	439329	FRONT COVER/COLLECTOR OU7-35/9	1
20	12	439342	MOTOR SUPPORT OU7	1
21	18	442007	CAPACITOR 6mF 400V P1/P2	1
22	20	442016	CAPACITOR 55mF 400V P1/P2	1
23	8	4529604	AXIAL FAN D493*143	1

13.27 Outdoor Unit: OU7-24Z RC 1PH

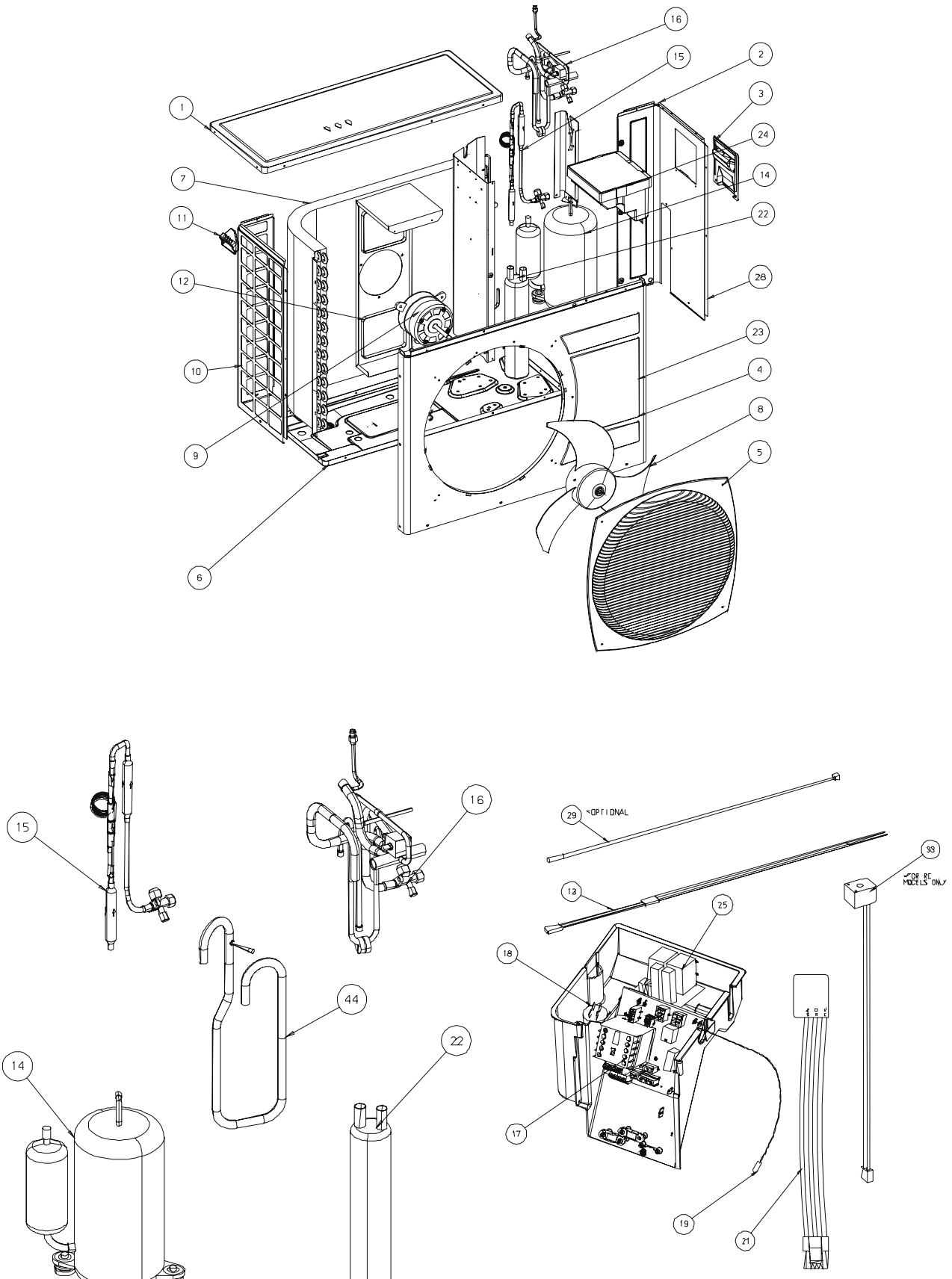




13.28 Outdoor Unit: OU7-24Z RC 1PH

SP No.	Part No.	Description	Qty
44	192207	CONTACTOR 230V, 40A	1
17	413496	BOARD TPHN 5F (RoHS)	1
2	433280	SIDE PANEL OU7-24 R410A	1
10	433281	SIDE GUARD OU7-24 R410	1
7	433285	COIL OU7-24 HDR	1
16	433660	TUBING ASSY OU7-24C R410A	1
6	433722	BASE ASSY OU7-24C EXPORT R410A	1
15	433934	CAPILLARY HEATING ASSY OU7-24 R410A	1
9	434211	replace by SP000000266 MOTOR+BRACKET	1
19a	434716	THERMISTOR L1050 (for coil)	1
3	436357	SMALL ELECTRICAL COVER CUE	1
11	436358	TRANSPORT HANDLE CUE	1
1	437045	LARGE UPPER COVER CUE	1
5	437091	OU SQUARE FAN GUARD	1
24	437229	ELECTRICAL BOX TPHN	1
21	438627	COMPRESSOR WIRING TPHN-5F	1
14	438795	COMPRESSOR GP270PAA	1
4	439329	COVERAIR COLLECTOR	1
12	439342	MOTOR BASE OU7	1
18	442007	CAPACITOR 6uF 400V	1
20	442038	CAPACITOR 50mF 400V P1/P2	1
33	442520	VALVE COIL L700 MOLEX-DUNAN	1
8	4529604	AXIAL FAN D493x143	1

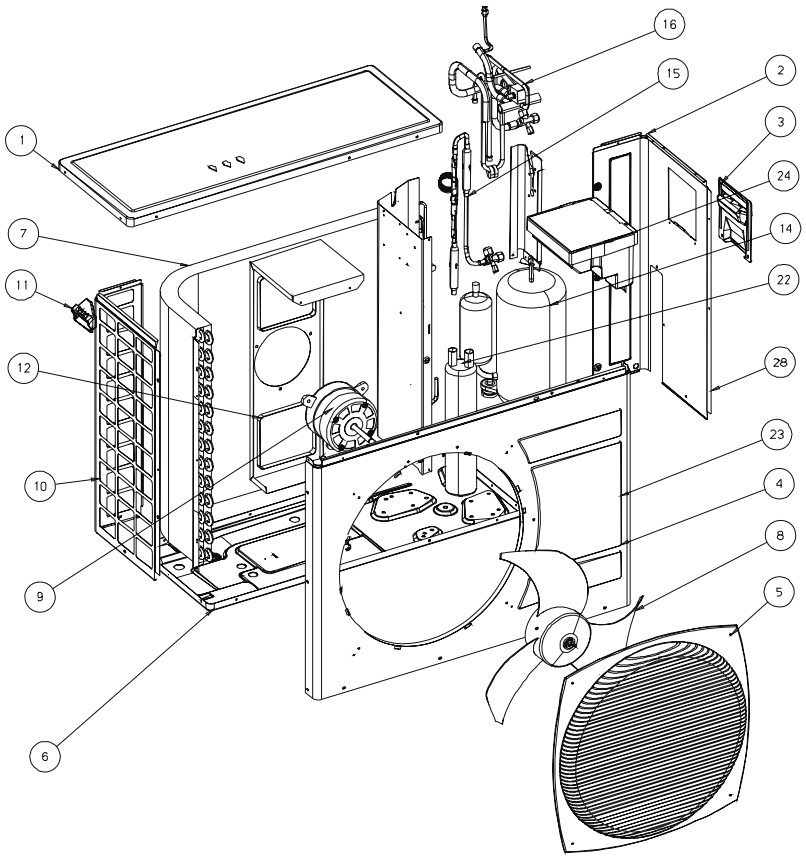
13.29 Outdoor Unit: OU7-24 RC 3PH

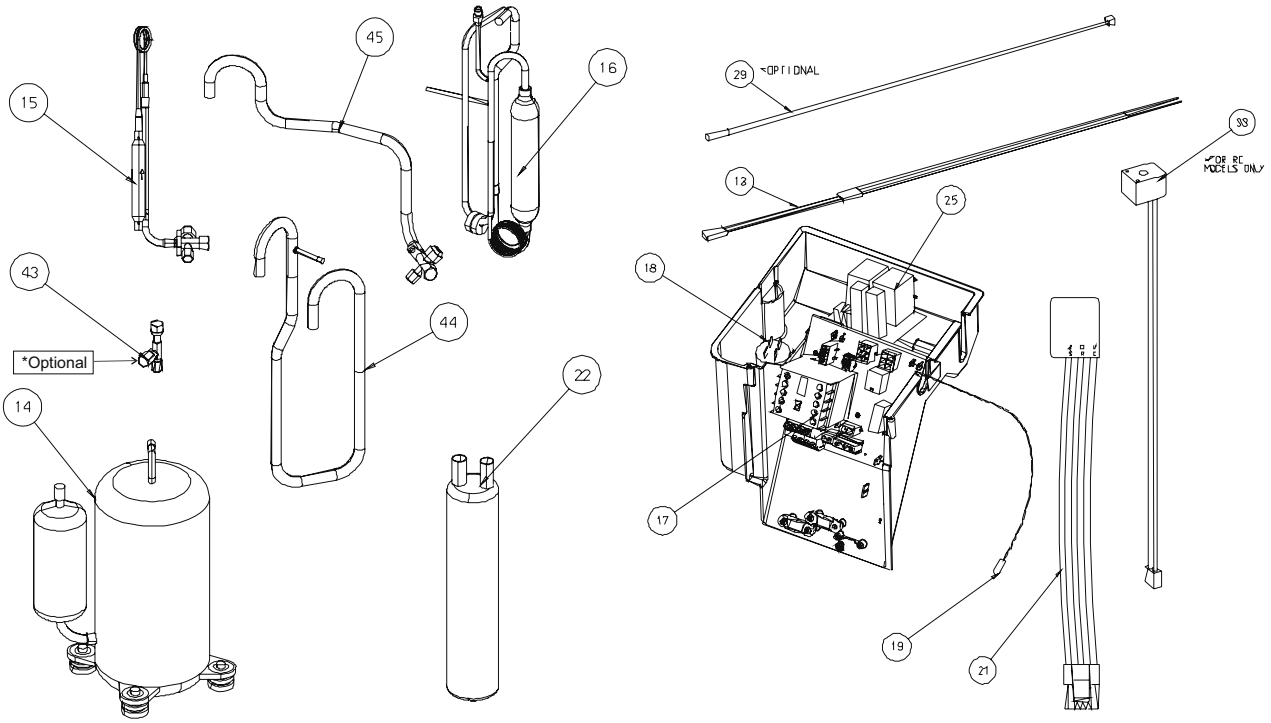


13.30 Outdoor Unit: OU7-24 RC 3PH

No.	SP No.	Part No.	Description	Qty
1	13	190443	HEATER CRANKCASE MITSUBISHI CO	1
2	22	402283	SUCTION ACCUMULATOR 3"x5/8" 3.	1
3	17	402494	BOARD TPHN 3C	1
4	7	433285	COIL OU7-24 HDR	1
5	15	433288	CAPILLARY ASSY OU7-24 R410A	1
6	16	433291	TUBING ASSY OU7 R410A	1
7	6	433294	NEW BASE ASSY OU 2005 EXPORT	1
8	14	433753	COMPRESSOR NN27YDAMT	1
9	44	433816	SUCTION ASSY OU7 R410A	1
10	9	434062	MOTOR 86W,2S,OU7-24	1
11	19	434716	THERMISTOR+CAP WTH CONNECTOR L	1
12	3	436357	SMALL ELECTRICAL COVER OU	1
13	11	436358	OU LEADING HANDLE	1
14	1	437045	UPPER COVER EL13 OU LARGE	1
15	5	437091	OU SQUARE FAN GUARD	1
16	24	437229	ELECTRICAL BOX TPHN	1
17	21	437278	COMPRESSOR WIRING OU7/8-3PH MI	1
18	4	439329	FRONT COVER/COLLECTOR OU7-35/9	1
19	12	439342	MOTOR SUPPORT OU7	1
20	25	439795	3PH MOTOR PROTECTOR	1
21	18	442007	CAPACITOR 6mF 400V P1/P2	1
22	33	442466	VALVE COIL L700 MOLEX-SANHUA	1
23	8	4529604	AXIAL FAN D493*143	1

13.31 Outdoor Unit: OU7-24 ST 3PH

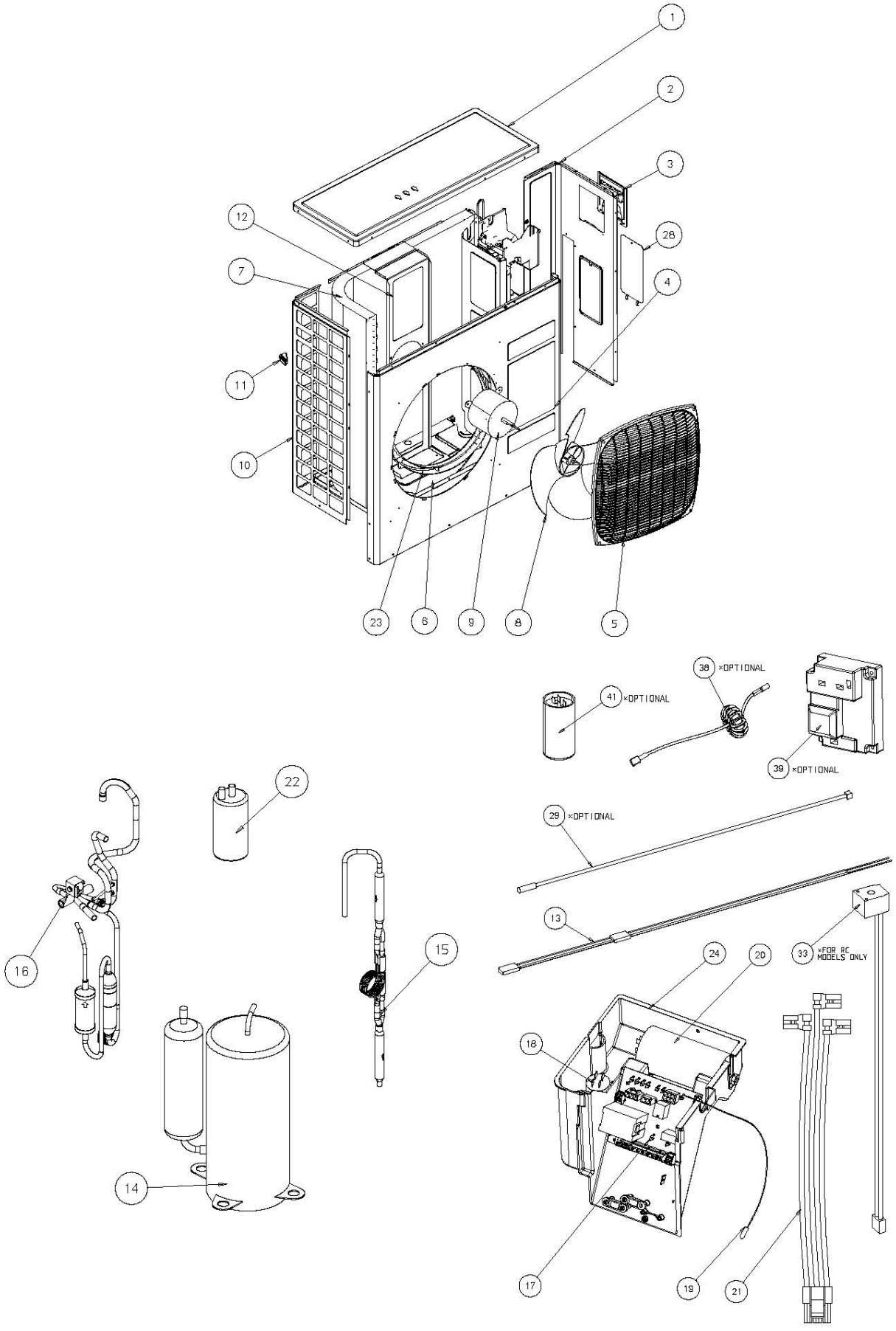




13.32 Outdoor Unit: OU7-24 ST 3PH

No.	SP No.	Part No.	Description	Qty
1	1	437045	LARGE UPPER COVER CUE	1
2	2	433280	SIDE PANEL OU7-24 R410A	1
3	3	436357	SMALL ELECTRICAL COVER CUE	1
4	4	439329	COVERAIR COLLECTOR	1
5	5	437091	OU SQUARE FAN GUARD	1
6	6	433705	NEW BASE ASSY OU 2005 LOCAL R410	1
7	7	433846	COIL OU7-24 ST	1
8	8	4529604	AXIAL FAN D493*143	1
9	9	434062	MOTOR 86W,2S,OU7-24	1
10	10	433281	SIDE GUARD OU7-24 R410	1
11	11	436358	TRANSPORT HANDLE CUE	1
12	12	439342	MOTOR BASE OU7	1
13	13	190443	HEATER CRANKCASE MITSUBISHI COMP	1
14	14	433753	COMPRESSOR NN27YDAMT	1
15	15	433845	CAPILLARY ASSY OU7-24 ST R410A	1
16	16	433817	TUBING ASSY OU7 ST R410A	1
17	17	402494	BOARD TPHN 3C	1
18	18	442007	CAPACITOR 6mF 400V P2	1
19	19	434716	THERMISTOR L1050 (for coil)	1
20	21	437278	MITSUBISHI	1
21	22	402283	SUCTION ACCUMULATOR	1
22	24	437229	ELECTRICAL BOX TPHN	1
23	25	439795	BOARD 3PH PROTECTOR	1
24	44	433816	SUCTION ASSY OU7 R410A	1
25	45	433847	GAS VAVE ASSY OU7 ST R410A	1

13.33 Outdoor Unit: OU8-30 RC 1PH



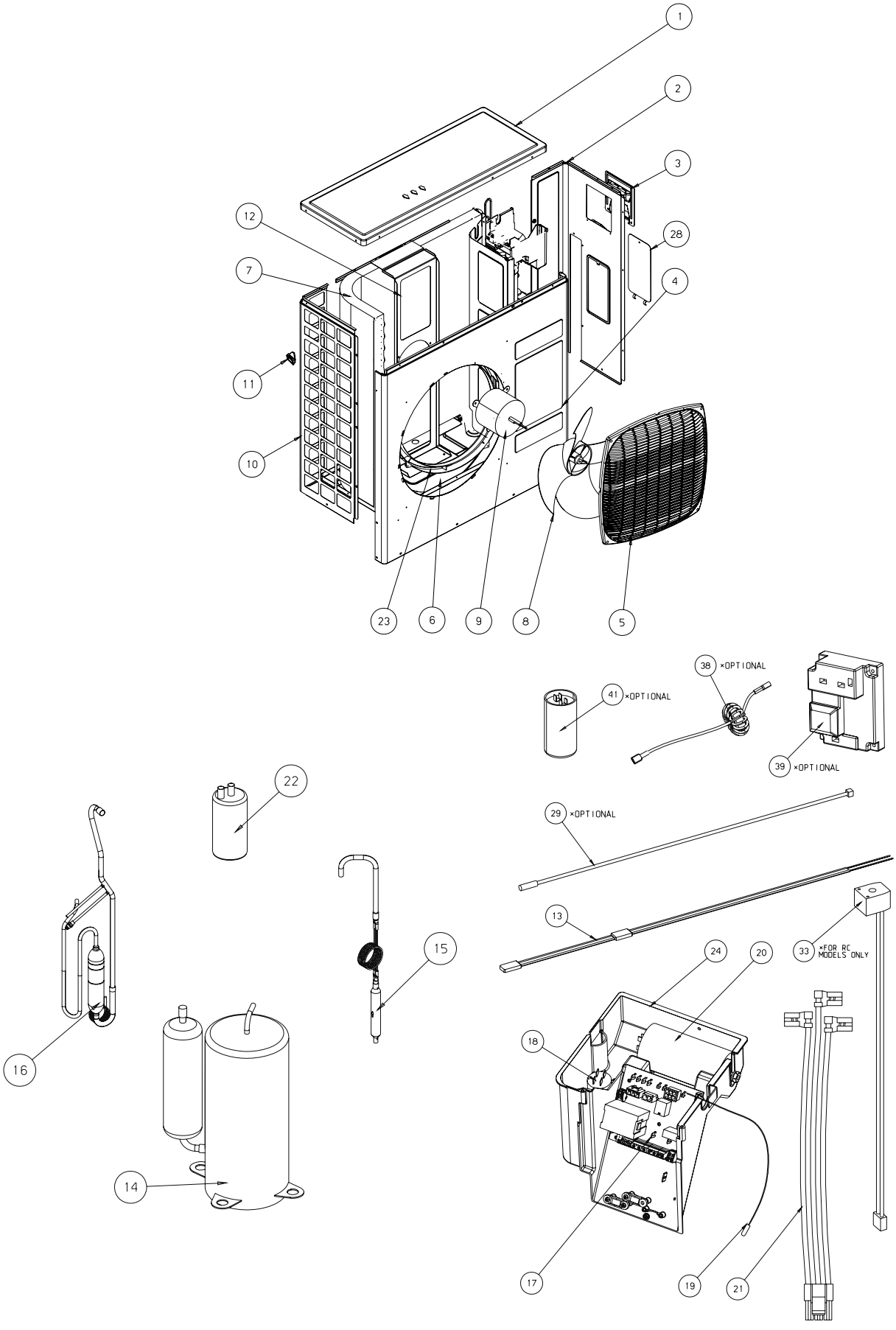
13.34 Outdoor Unit: OU8-30 RC 1PH

Item Code	Item Description	Quantity	Drawing Number
437045	UPPER COVER EL13 OU LARGE	1	1
402930	SIDE PANEL OU8-33	1	2
436357	SMALL ELECTRICAL COVER OU	1	3
439929	FRONT PANEL/COLLECTOR OU8-30	1	4
437091	OU SQUARE FAN GUARD	1	5
433294	NEW BASE ASSY OU 2005 EXPORT	1	6
433807	COIL OU8-30 GR HDR R410A	1	7
4529604	AXIAL FAN D493*143	1	8
434062	MOTOR 86W,2S,OU7-24	1	9
403996	SIDE GUARD OU8-33Z	1	10
436358	OU LEADING HANDLE	1	11
439775	MOTOR SUPPORT OU8	1	12
190443	HEATER CRANKCASE MITSUBISHI	1	13
433297	COMPRESSOR NN33VAAMT	1	14
433822	CAPILLARY ASSY OU8-30 R410A RC	1	15
433829	TUBING ASSY OU8-30 R410A	1	16
402495	BOARD TPHN 5B	1	17
442007	CAPACITOR 6mF 400V P1/P2	1	18
434716	THERMISTOR+CAP WTH CONNECTOR	1	19
442016	CAPACITOR 55mF 400V P1/P2	1	20
437274	COMPRESOR WIRING OU7/8-1PH	1	21
402284	SUCTION ACCUMULATOR 5" x 3/4"	1	22
439928	OUTLET PLASTIC RING OU8	1	23
437229	ELECTRICAL BOX TPHN	1	24
439656	SIDE COVER OU-8/10	1	28
442466	VALVE COIL L700 MOLEX-SANHUA	1	33

13.35 Outdoor Unit: O8-30 RC 1PH Soft Starter

Item Code	Item Description	Quantity	Drawing Number
437045	UPPER COVER EL13 OU LARGE	1	1
402930	SIDE PANEL OU8-33	1	2
436357	SMALL ELECTRICAL COVER OU	1	3
439929	FRONT PANEL/COLLECTOR OU8-30	1	4
437091	OU SQUARE FAN GUARD	1	5
433294	NEW BASE ASSY OU 2005 EXPORT	1	6
433807	COIL OU8-30 GR HDR R410A	1	7
4529604	AXIAL FAN D493*143	1	8
434062	MOTOR 86W,2S,OU7-24	1	9
403996	SIDE GUARD OU8-33Z	1	10
436358	OU LEADING HANDLE	1	11
439775	MOTOR SUPPORT OU8	1	12
190443	HEATER CRANKCASE MITSUBISHI	1	13
433297	COMPRESSOR NN33VAAMT	1	14
433822	CAPILLARY ASSY OU8-30 R410A RC	1	15
433829	TUBING ASSY OU8-30 R410A	1	16
402495	BOARD TPHN 5B	1	17
442007	CAPACITOR 6mF 400V P1/P2	1	18
434716	THERMISTOR+CAP WTH CONNECTOR	1	19
442016	CAPACITOR 55mF 400V P1/P2	1	20
437292	COMPRESSOR WIRING OU7/8-1PH	1	21
402284	SUCTION ACCUMULATOR 5" x 3/4"	1	22
439928	OUTLET PLASTIC RING OU8	1	23
437229	ELECTRICAL BOX TPHN	1	24
439656	SIDE COVER OU-8/10	1	28
442466	VALVE COIL L700 MOLEX-SANHUA	1	33
433607	CHOCK FOR SOFT STARTER	1	38
433296	SOFT STARTER	1	39
442022	SOFT STARTER CAPACITOR 161-193	1	41

13.36 Outdoor Unit: OU8-30 ST 1PH



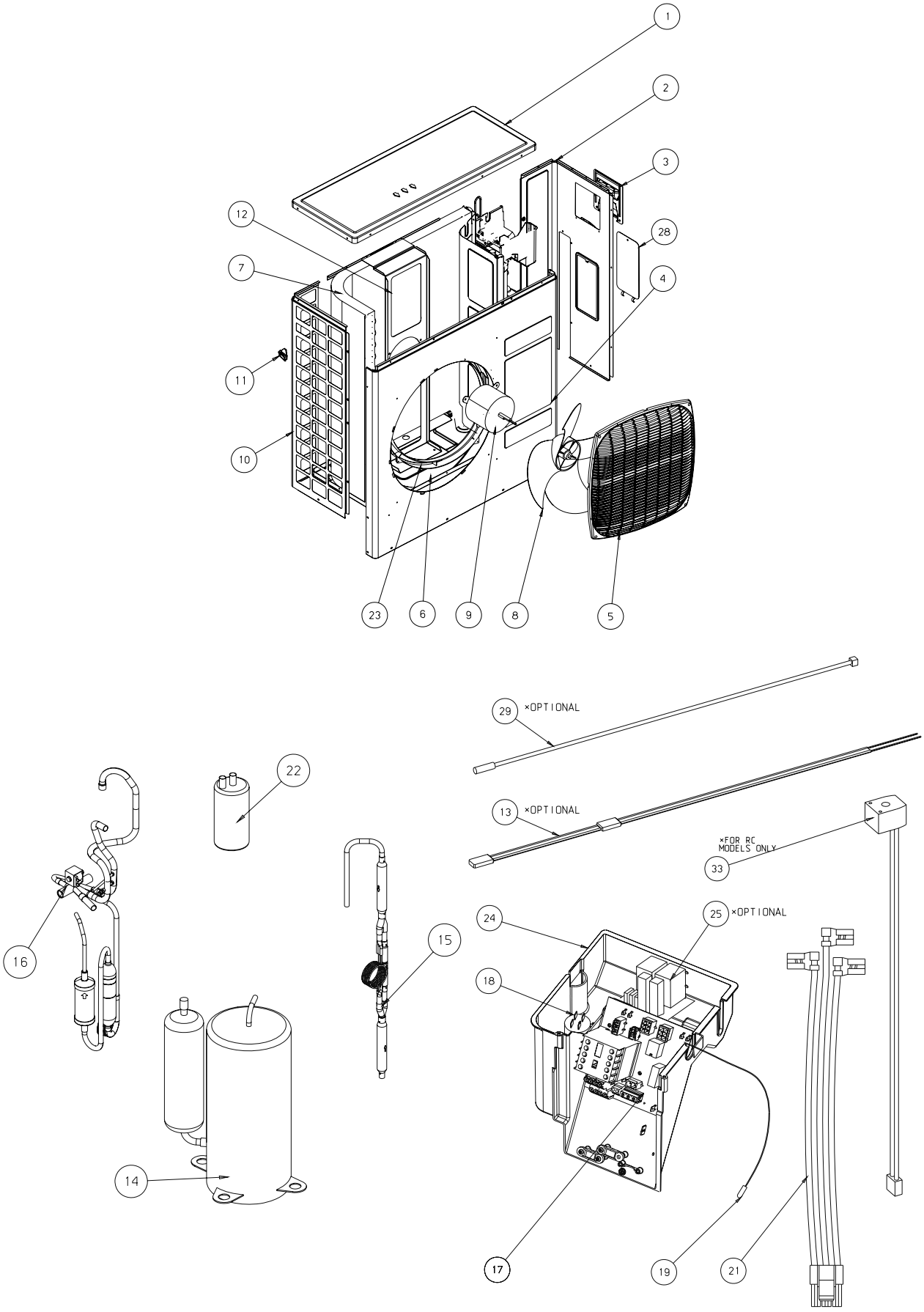
13.37 Outdoor Unit: OOU8-30 ST 1PH

Item Code	Item Description	Quantity	Drawing Number
437045	UPPER COVER EL13 OU LARGE	1	1
402930	SIDE PANEL OU8-33	1	2
436357	SMALL ELECTRICAL COVER OU	1	3
439929	FRONT PANEL/COLLECTOR OU8-30	1	4
437091	OU SQUARE FAN GUARD	1	5
433705	NEW BASE ASSY OU 2005 LOCAL	1	6
433834	COIL OU8-30 ST GR R410A	1	7
4529604	AXIAL FAN D493*143	1	8
434062	MOTOR 86W,2S,OU7-24	1	9
403996	SIDE GUARD OU8-33Z	1	10
436358	OU LEADING HANDLE	1	11
439775	MOTOR SUPPORT OU8	1	12
190443	HEATER CRANKCASE MITSUBISHI	1	13
433297	COMPRESSOR NN33VAAMT	1	14
433830	CAPILLARY ASSY OU8-30 R410A ST	1	15
433833	TUBING ASSY OU8-30 ST R410A	1	16
402495	BOARD TPHN 5B	1	17
442007	CAPACITOR 6mF 400V P1/P2	1	18
434716	THERMISTOR+CAP WTH CONNECTOR	1	19
442016	CAPACITOR 55mF 400V P1/P2	1	20
437274	COMPRESOR WIRING OU7/8-1PH	1	21
402284	SUCTION ACCUMULATOR 5" x 3/4"	1	22
439928	OUTLET PLASTIC RING OU8	1	23
437229	ELECTRICAL BOX TPHN	1	24
439656	SIDE COVER OU-8/10	1	28

13.38 Outdoor Unit: OU8-30 ST 1 PH Soft Starter

Item Code	Item Description	Quantity	Drawing Number
437045	UPPER COVER EL13 OU LARGE	1	1
402930	SIDE PANEL OU8-33	1	2
436357	SMALL ELECTRICAL COVER OU	1	3
439929	FRONT PANEL/COLLECTOR OU8-30	1	4
437091	OU SQUARE FAN GUARD	1	5
433705	NEW BASE ASSY OU 2005 LOCAL	1	6
433834	COIL OU8-30 ST GR R410A	1	7
4529604	AXIAL FAN D493*143	1	8
434062	MOTOR 86W,2S,OU7-24	1	9
403996	SIDE GUARD OU8-33Z	1	10
436358	OU LEADING HANDLE	1	11
439775	MOTOR SUPPORT OU8	1	12
190443	HEATER CRANKCASE MITSUBISHI	1	13
433297	COMPRESSOR NN33VAAMT	1	14
433830	CAPILLARY ASSY OU8-30 R410A ST	1	15
433833	TUBING ASSY OU8-30 ST R410A	1	16
402495	BOARD TPHN 5B	1	17
442007	CAPACITOR 6mF 400V P1/P2	1	18
434716	THERMISTOR+CAP WTH CONNECTOR	1	19
442016	CAPACITOR 55mF 400V P1/P2	1	20
437292	COMPRESSOR WIRING OU7/8-1PH	1	21
402284	SUCTION ACCUMULATOR 5"x3/4"	1	22
439928	OUTLET PLASTIC RING OU 8	1	23
437229	ELECTRICAL BOX TPHN	1	24
439656	SIDE COVER OU-8/10	1	28
433607	CHOCK FOR SOFT STARTER	1	38
433296	SOFT STARTER	1	39
442022	SOFT STARTER CAPACITOR 161-193	1	41

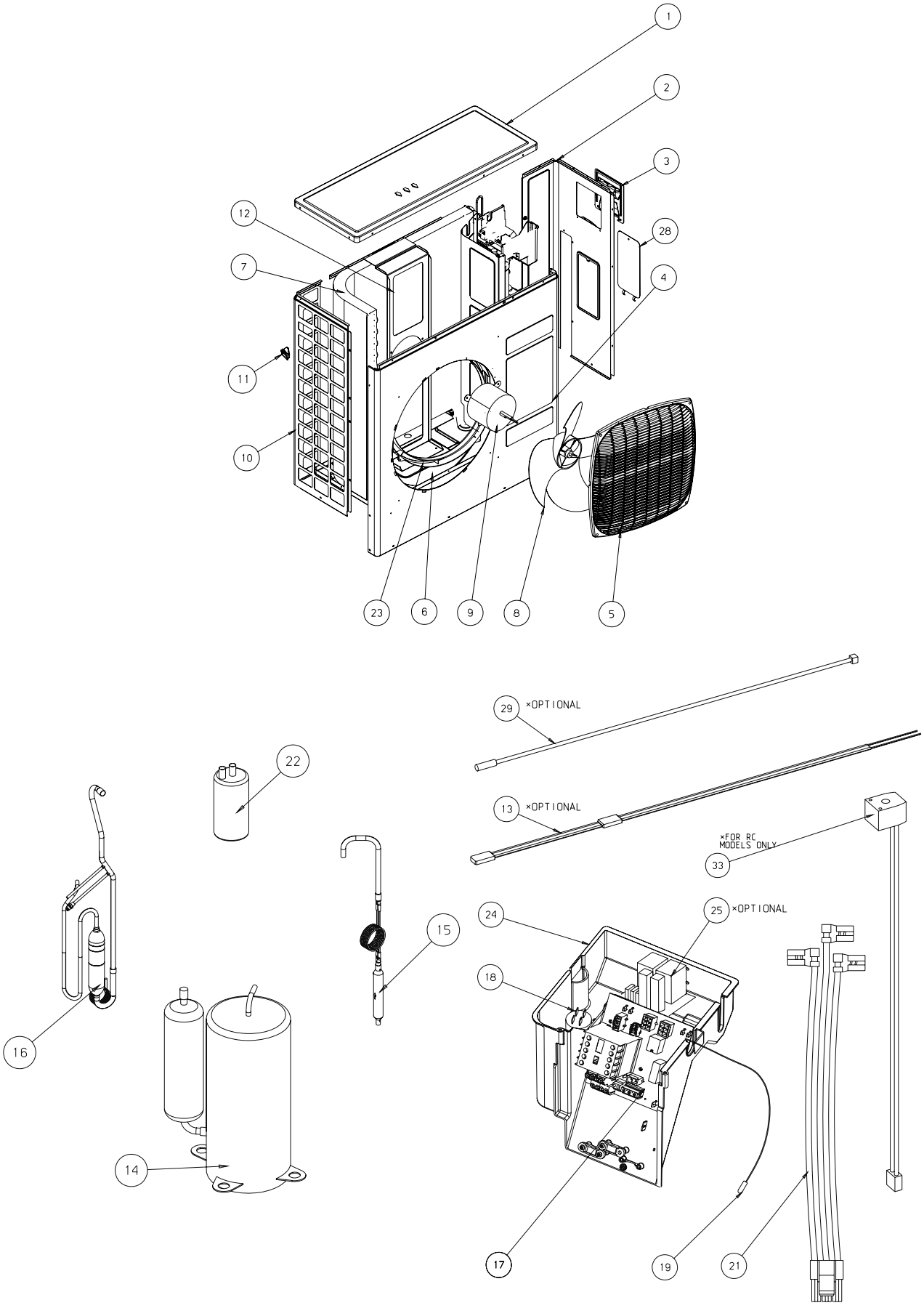
13.39 Outdoor Unit: OOU8-30 RC 3PH



13.40 Outdoor Unit: OU8-30 RC 3PH

Item Code	Item Description	Quantity	Drawing Number
437045	UPPER COVER EL13 OU LARGE	1	1
402930	SIDE PANEL OU8-33	1	2
436357	SMALL ELECTRICAL COVER OU	1	3
439929	FRONT PANEL/COLLECTOR OU8-30	1	4
437091	OU SQUARE FAN GUARD	1	5
433294	NEW BASE ASSY OU 2005 EXPORT	1	6
433807	COIL OU8-30 GR HDR R410A	1	7
4529604	AXIAL FAN D493*143	1	8
434062	MOTOR 86W,2S,OU7-24	1	9
403996	SIDE GUARD OU8-33Z	1	10
436358	OU LEADING HANDLE	1	11
439775	MOTOR SUPPORT OU8	1	12
190443	HEATER CRANKCASE MITSUBISHI	1	13
433298	COMPRESSOR NN33YCAMT	1	14
433822	CAPILLARY ASSY OU8-30 R410A RC	1	15
433829	TUBING ASSY OU8-30 R410A	1	16
402494	BOARD TPHN 3C	1	17
442007	CAPACITOR 6mF 400V P1/P2	1	18
434716	THERMISTOR+CAP WTH CONNECTOR	1	19
437278	COMPRESSOR WIRING OU7/8-3PH	1	21
402284	SUCTION ACCUMULATOR 5" x 3/4"	1	22
439928	OUTLET PLASTIC RING OU8	1	23
437229	ELECTRICAL BOX TPHN	1	24
439795	3PH MOTOR PROTECTOR	1	25
439656	SIDE COVER OU-8/10	1	28
442466	VALVE COIL L700 MOLEX-SANHUA	1	33

13.41 Outdoor Unit: OU8-30 ST 3PH



13.42 Outdoor Unit:OU8-30 ST 3PH

Item Code	Item Description	Quantity	Drawing Number
437045	UPPER COVER EL13 OU LARGE	1	1
402930	SIDE PANEL OU8-33	1	2
436357	SMALL ELECTRICAL COVER OU	1	3
439929	FRONT PANEL/COLLECTOR OU8-30	1	4
437091	OU SQUARE FAN GUARD	1	5
433705	NEW BASE ASSY OU 2005 LOCAL	1	6
433834	COIL OU8-30 ST GR R410A	1	7
4529604	AXIAL FAN D493*143	1	8
434062	MOTOR 86W,2S,OU7-24	1	9
403996	SIDE GUARD OU8-33Z	1	10
436358	OU LEADING HANDLE	1	11
439775	MOTOR SUPPORT OU8	1	12
190443	HEATER CRANKCASE MITSUBISHI	1	13
433298	COMPRESSOR NN33YCAMT	1	14
433830	CAPILLARY ASSY OU8-30 R410A ST	1	15
433833	TUBING ASSY OU8-30 ST R410A	1	16
402494	BOARD TPHN 3C	1	17
442007	CAPACITOR 6mF 400V P1/P2	1	18
434716	THERMISTOR+CAP WTH CONNECTOR	1	19
437278	COMPRESSOR WIRING OU7/8-3PH	1	21
402284	SUCTION ACCUMULATOR 5" x 3/4"	1	22
439928	OUTLET PLASTIC RING OU8	1	23
437229	ELECTRICAL BOX TPHN	1	24
439795	3PH MOTOR PROTECTOR	1	25
439656	SIDE COVER OU-8/10	1	28

14. OPTIONAL ACCESSORIES

14.1 RCW Wall Mounted Remote Control

14.1.1 The RCW wall mounted remote control can be fitted to a large range and models, It can be used as IR (wirless mode) or wired controler.the RCW can control up to15 indoor units using the same settings (on its wired aplication),

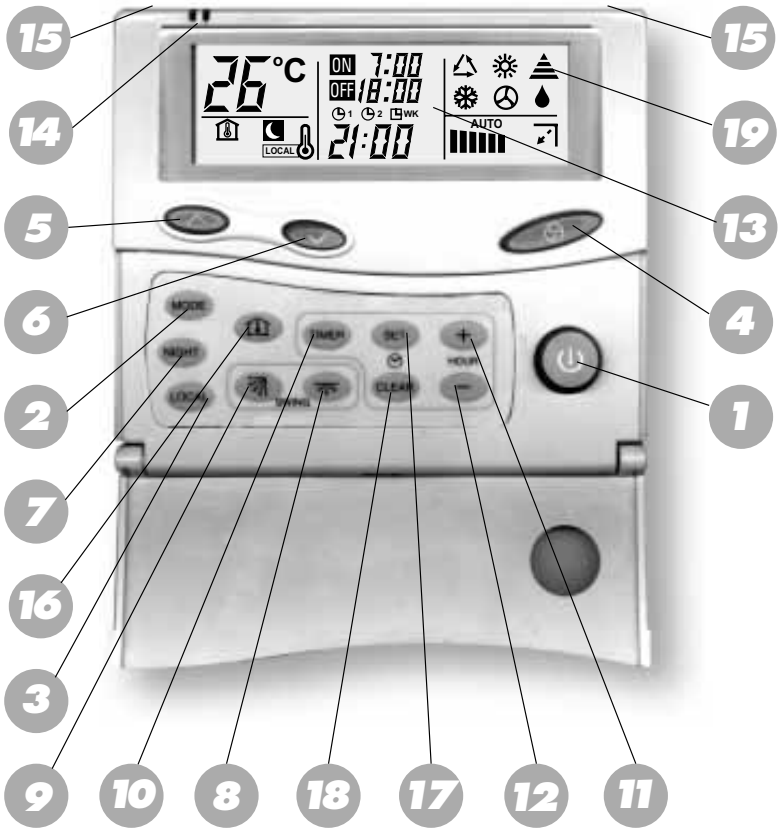
The max wiring length between the controller to the last indoor unit is 300m. for application on WNG LED indoor units an additional interface PCB is needed.

Ordering code no':

RCW – 436195
WNG add' PCB - SP000000290.

REMOTE CONTROL

1. START / STOP button
2. Operation mode selection button COOLING, HEATING, AUTO COOL / HEAT, DRY, FAN.
3. LOCAL temperature sensing button
4. FAN SPEED and AUTO FAN button
5. Room temperature UP button
6. Room temperature DOWN Button
7. NIGHT button
8. Airflow direction MANUAL positioning cor
9. Airflow direction AUTO-CONTROL buttor
10. TIMER button
11. TIMER UP button
12. TIMER DOWN button
13. LCD operation display
14. LOCAL sensor
15. Infrared signal transmitter
16. ROOM temperature button
17. TIMER SET button
18. TIMER CLEAR button
19. Transmission sign



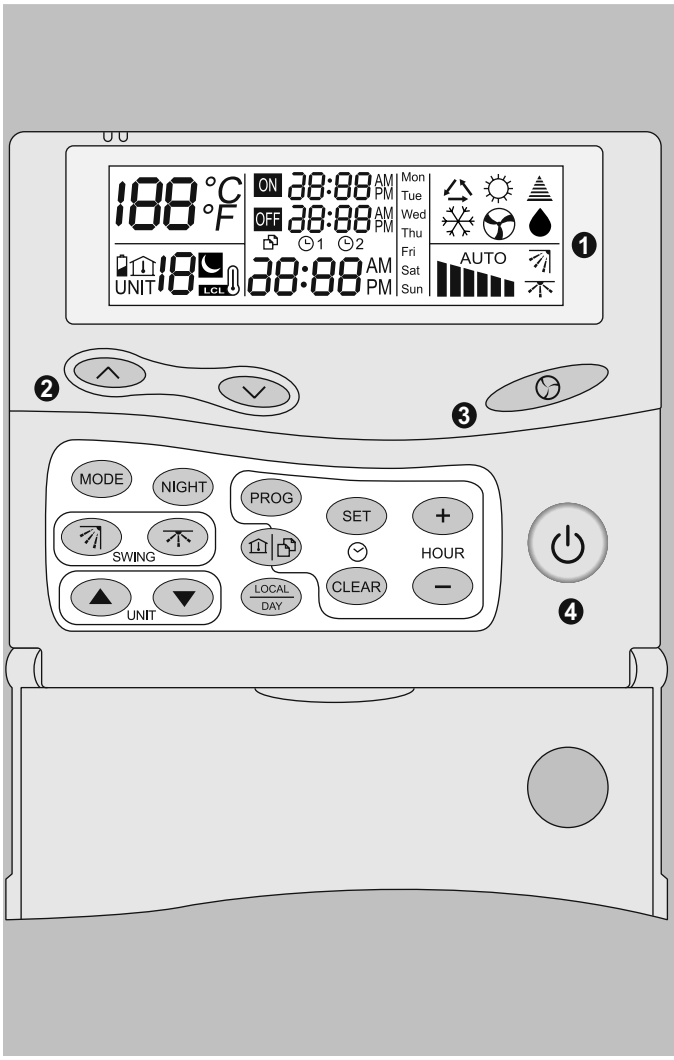
14.2 RCW2 Wall Mounted Remote Cntrol

14.2.1 The RCW2 wall mounted remote controler is a wired controler that can provide affective controling management up to 15 different settings and temp' zones.

The RCW2 can be connected up to a max' of 32 units,allowing a max wiring length of 1000m. for application on WNG LED indoor units an additional interface PCB is needed.

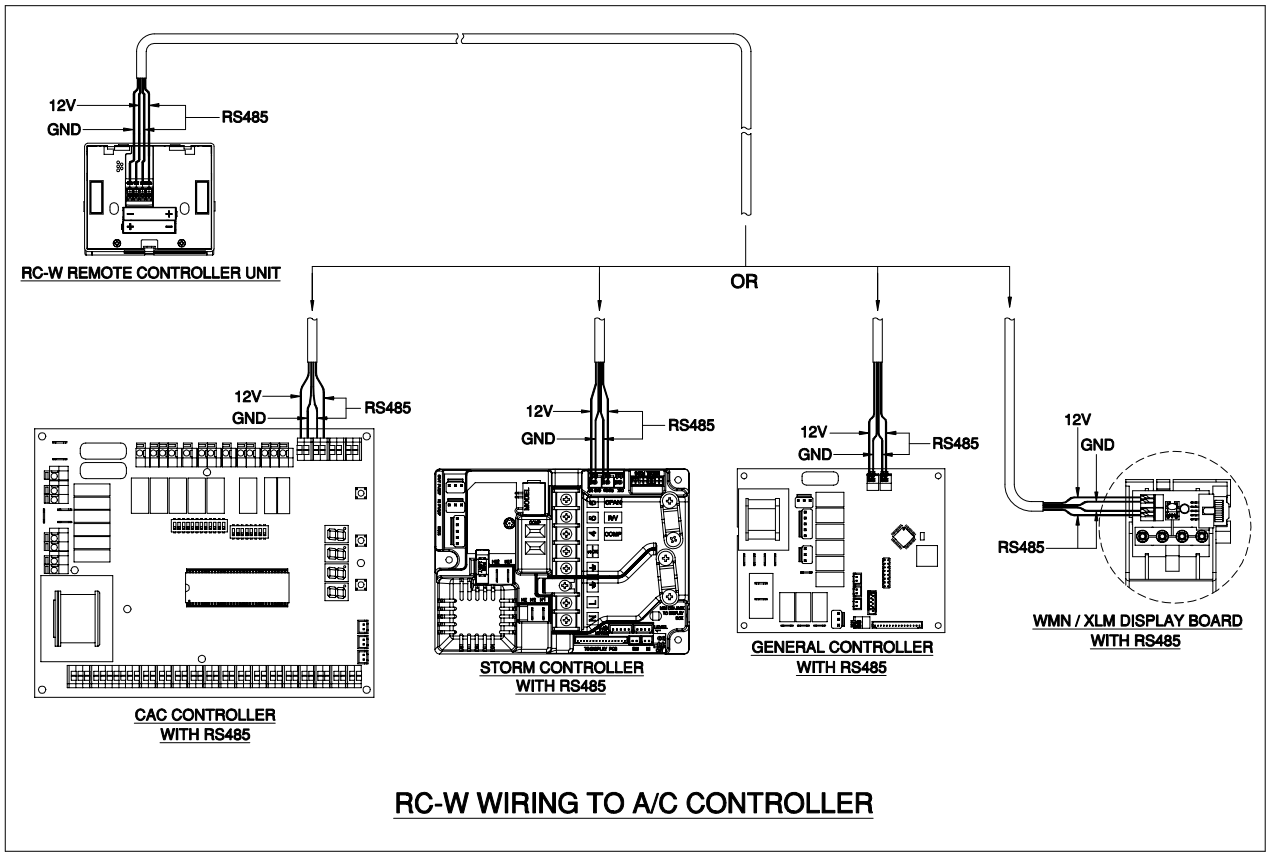
Ordering code no':

RCW2 – SP000000081
WNG add' PCB - SP000000290



❶ Display screen.
❷ Keys for raising and lowering the set temperature.
❸ Ventilation mode selection :
Low speed.
Medium speed.
High speed.
AUTO : Automatic speed selection.
❹ ON / Standby.
SET Accessing the time setting mode.
+ Advancing the time setting.
– Retarding the time setting.
CLEAR Clearing memory of programmed time settings in programming mode.
LOCAL DAY Day of the week selection key or sending "I feel" local temperature setting.
PROG Programming mode key.
"Copy" key, enabling zone parameters to be duplicated for other zones.
MODE Operating mode selection.
NIGHT Day /Night key.
Current zone setting: zone above.
Current zone setting: zone below.
Louver : step by step or horizontal.
Louver : vertical.

14.3 RCW/RCW2 Wiring Connections as Shown on Kit



RC-W WIRING TO A/C CONTROLLER

All Season Kit Installation Instruction(for ST units only)

Switch off power supply to the unit

Fig.1

- Remove:
  - Cover **A;**
  - Power panel handle **B;**
  - Side cover **C** (if it exist).

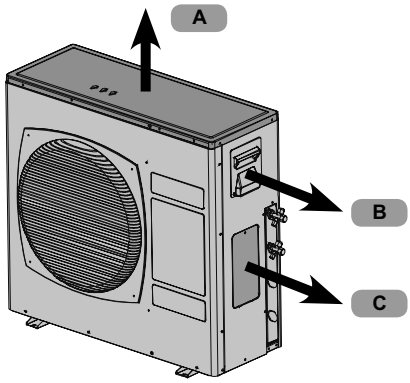


Fig.1

Fig.2

- Mount the Fan speed controller on the partition of the compressor compartment in the holes provided, using four supplied screws .

Note:

- In outdoor models OU8, the Fan Speed Controller should be mounted on the partition toward the outdoor fan motor side.

OU7

OU10

OU8

Fig.2

Fig.3

- Unscrew the cap of the provided service valve **D** and connect to the **T-valve**, supplied in the kit. Use Copper sealing gasked between the flare nut and it's connection to service valve **D**.

Note:

- The **"T-valve"** supplied in the kit is installed between valve **D** and capillary **E** offering the possibility of an additionall pressure connecting output for service.

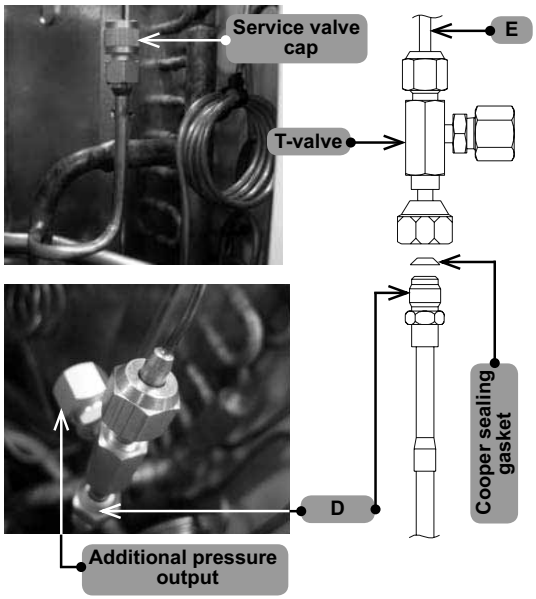


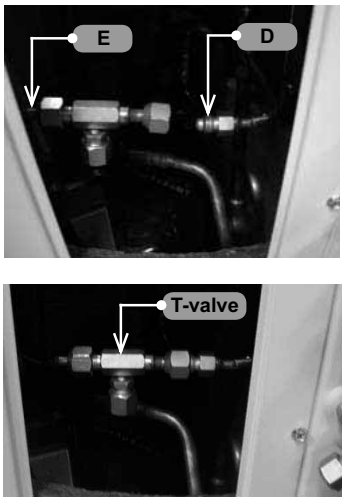
Fig.3

Fig.4

- Connect capillary **E** to **T-valve**.
  Use Copper sealing gasket between the flare nut and the connection to **T-valve.**

Note:

- Installing the Copper sealing gasket is mandatory in order to avoid refrigerant leak.



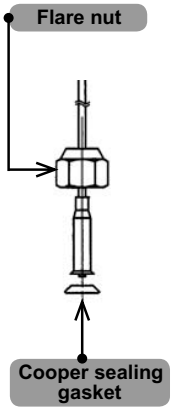
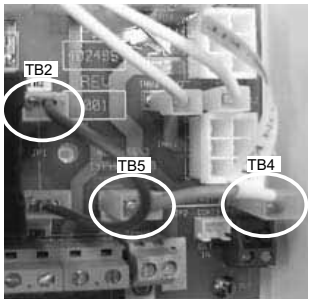


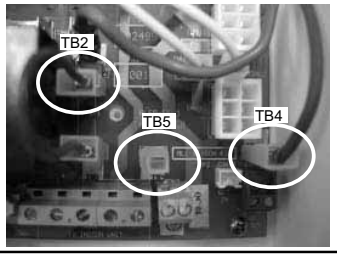
Fig.4

Fig.5

Electrical connections for 1PH units:

- Disconnect the wire from point “6” on main terminal outdoor PCB Typhoon and isolate it with isolation tape.
- Disconnect the JP1 and JP2 wires from tabs TB2; TB4; TB5 on PCB Typhoon.
  Connect the Red Wire from Fan Speed Controller to tab “TB4” on PCB Typhoon.
- Connect Green Wire from Fan Speed Controller to tab “TB2” on PCB Typhoon.
- Connect Y/Green wire from Fan Speed Controller to ground screw on units partition.
- Return “JP1” wire, previously disconnected, to tab “TB2”.





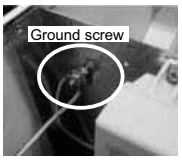
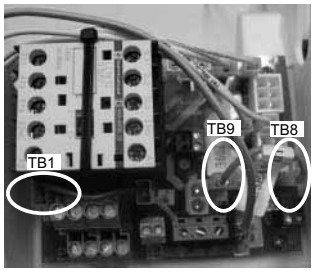


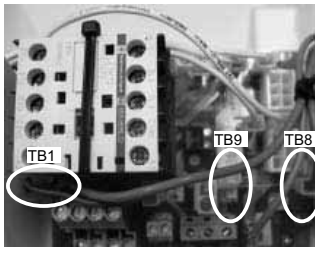
Fig.5

Fig.6

Electrical connections for 3PH units:

- Disconnect the wire from point “6” on main terminal PCB Typhoon and isolate it with isolation tape.
- Disconnect the JP1 and JP2 wires from tabs TB1; TB8; TB9 on PCB Typhoon.
- Connect Red Wire from Fan Speed Controller to tab “TB8” on PCB Typhoon.
- Connect Green Wire from Fan Speed Controller to Tab “TB1” on PCB Typhoon.
- Connect Y/Green wire from Fan Speed Controller to ground screw on units partition.
- Return “JP1” wire, previously disconnected, to





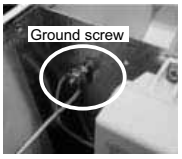
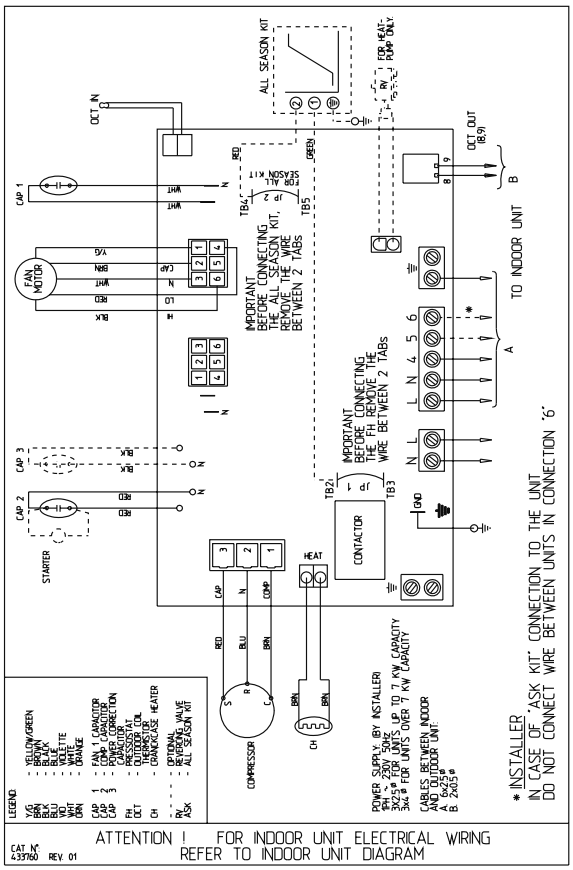


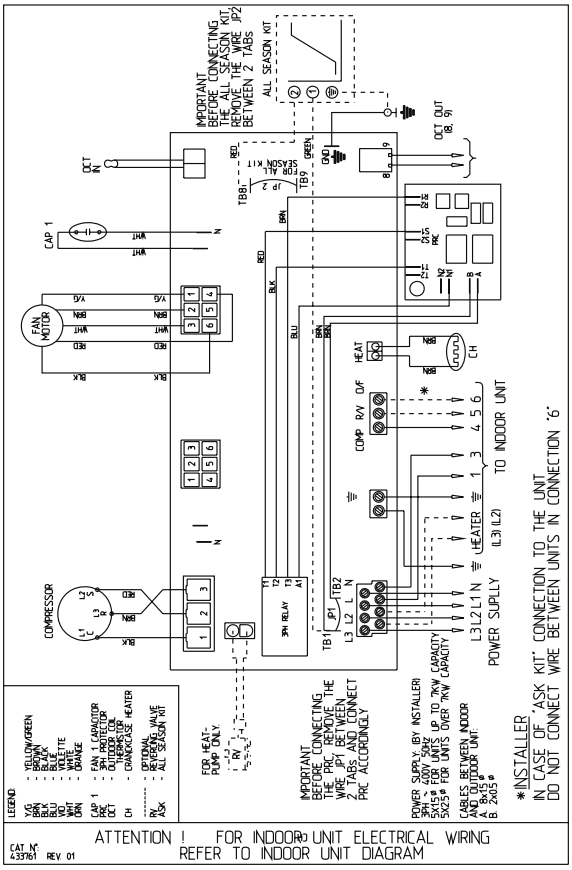
Fig.6

Fig.7

- Verify the wiring to electrical diagram.


ALL SEASON KIT
FOR HEAT-PUMP ONLY
OCT IN
OCT OUT (B)
CAP 1
CAP 2
CAP 3
FAN MOTOR
STARTER
CONTACTOR
HEAT
COMPRESSOR
TO INDOOR UNIT
IMPORTANT BEFORE CONNECTING THE ALL SEASON KIT, REMOVE THE WIRE BETWEEN 2 TABS
IMPORTANT BEFORE CONNECTING THE FH REMOVE THE WIRE BETWEEN 2 TABS
* INSTALLER IN CASE OF "ASK KIT" CONNECTION TO THE UNIT DO NOT CONNECT WIRE BETWEEN UNITS IN CONNECTION "6"
POWER SUPPLY BY INSTALLER
CABLES BETWEEN INDOOR AND OUTDOOR UNIT
LEGEND
ATTENTION ! FOR INDOOR UNIT ELECTRICAL WIRING
REFER TO INDOOR UNIT DIAGRAM
CAT N° 433760 REV. 01

1PH Unit


IMPORTANT BEFORE CONNECTING THE ALL SEASON KIT, REMOVE THE WIRE BETWEEN 2 TABS
ALL SEASON KIT
OCT IN
OCT OUT (B)
CAP 1
FAN MOTOR
COMPRESSOR
3PH RELAY
COMP R/V O/F
HEAT
CH
HEATER
TO INDOOR UNIT
POWER SUPPLY
FOR HEAT-PUMP ONLY
IMPORTANT BEFORE CONNECTING THE WIRE BETWEEN 2 TABS AND CONNECT PRC ACCORDINGLY
POWER SUPPLY BY INSTALLER
CABLES BETWEEN INDOOR AND OUTDOOR UNIT
* INSTALLER IN CASE OF "ASK KIT" CONNECTION TO THE UNIT DO NOT CONNECT WIRE BETWEEN UNITS IN CONNECTION "6"
LEGEND
ATTENTION ! FOR INDOOR UNIT ELECTRICAL WIRING
REFER TO INDOOR UNIT DIAGRAM
CAT N° 433761 REV. 01

3PH Unit

Fig.8

- Arrange the wires and capillary tube together with plastic ties, don't fold or break the capillary tube,keep a large loop for extra length of capillary tube.
- Check for refrigerant leaks.

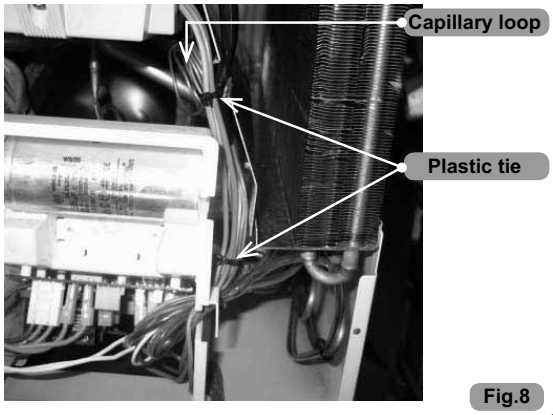


Fig.8

- Re-assemble the previously removed elements.

TH 3263 E - 399529

Electric heating for
PXD 12 - 15 - 18 - 24 - 28 - 32
SX SP 9 - 12 - 15 - 18- -24 - 30

GB I F E D

KIT DETAILS :

- *1 electric heater with wiring*
- *2 metal supports + screws*
- *2 screws to fix heater*
- *1 foam insulation block*
- *2 foam insulation squares*
- *1 sticky back wiring diagram to place in the side panel above the unit wiring diagram*
- *1 configuration plug (heatpump = 243213)*

MAKE SURE THAT AIR CONDITIONER IS DISCONNECTED FROM THE MAINS

KIT INSTALLATION : (Fig.1)

1 *Open the return air grille by pulling both edges*

2 *Remove the end screws*
Unscrew the middle screw without removing it

3 *Unhook the grille by pulling upwards*

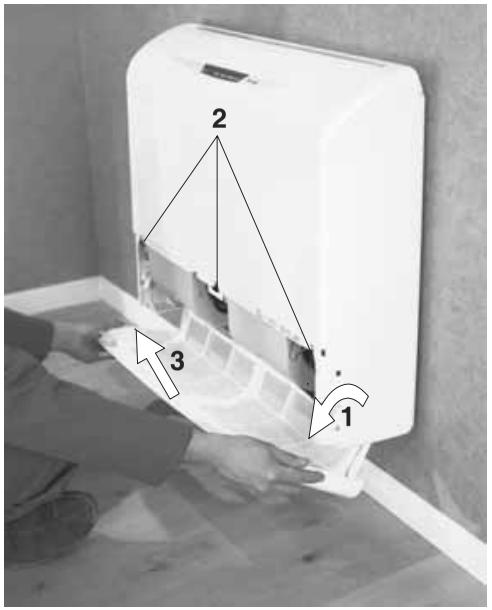
4 *Remove the side panels by pulling down*

5 *Remove the 3 screws holding the unit top*

6 *Unhook the unit top*

*Disconnect the wires between the **PXD** and the top:*
• Display cable (clear insulated cable).
• Vertical louver motor wires (red and blue with connectors).
• Horizontal louver motor wires (black).
Take care to separate the wire to help re-instalation.

Fig.1



KIT INSTALLATION: (Fig.2)

1 *Insert the metal support in the slots (push to break the polystyrene behind the slot)*

2 *Fix the supports with the supplied screws*

3 *Cover the metal supports with the foam squares (to avoid air by-pass)*

4 *Slide the heater assembly into the PXD*

5 *Fix the heater assembly to the supports with the supplied screws*

ELECTRICAL CONNECTIONS

- *Place the wiring in the corner so that the unit top can be replaced*

MODELS PXD 12 - 15 - 18 - 24 - 28 - 32

- *Connect the wires with 6.35 connectors directly to the control board as shown*

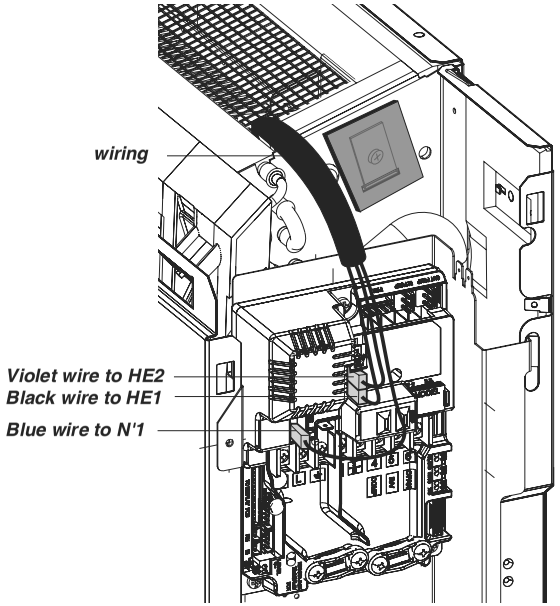
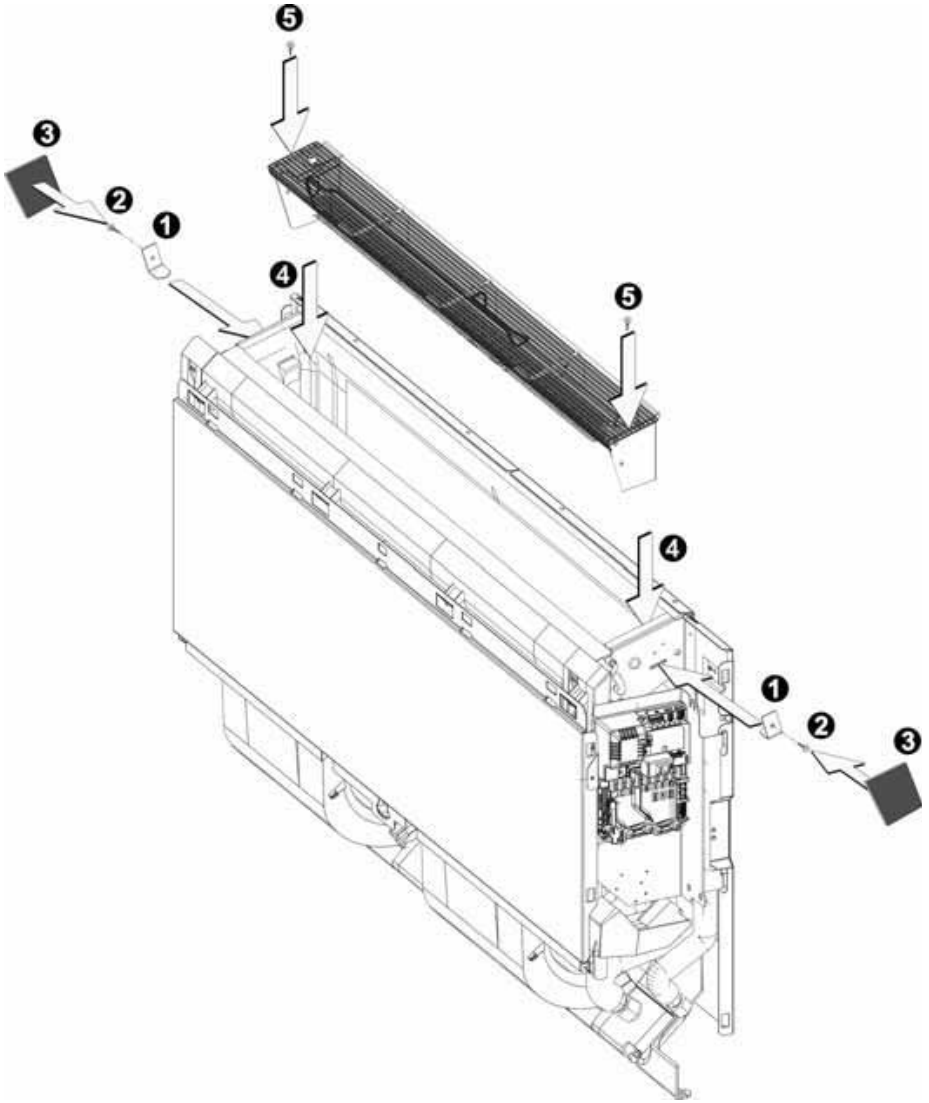
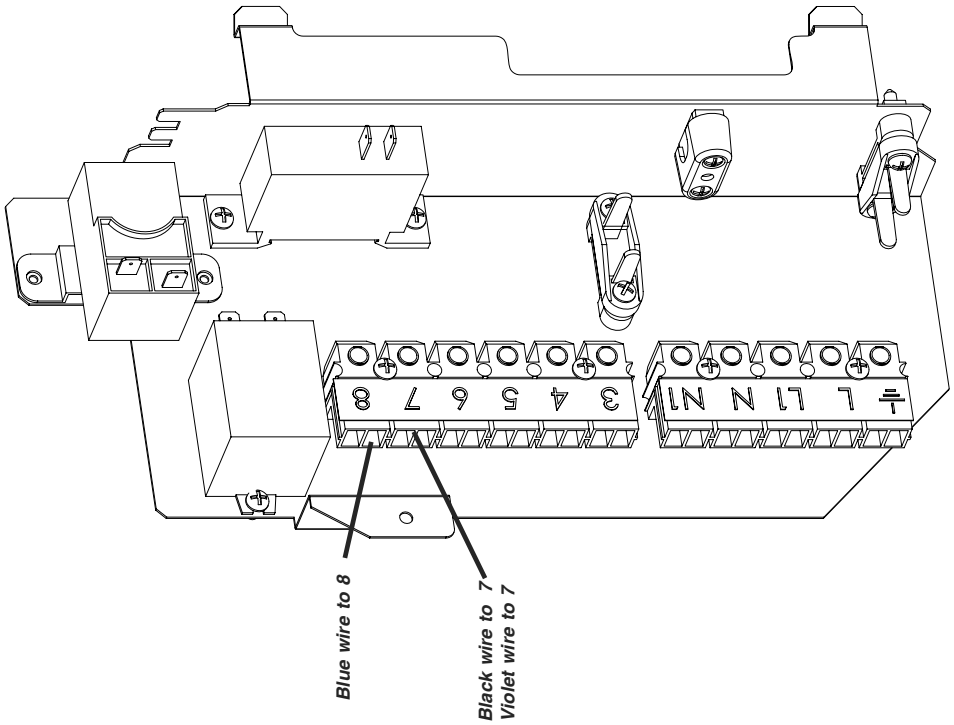


Fig.2



SXSP 9 - 12 - 15 - 18 - 24 - 30



MODELS SXSP 9 - 12 - 15 - 18 - 24 - 30

- Connect the wires with 6.35 connectors directly to the control board as shown

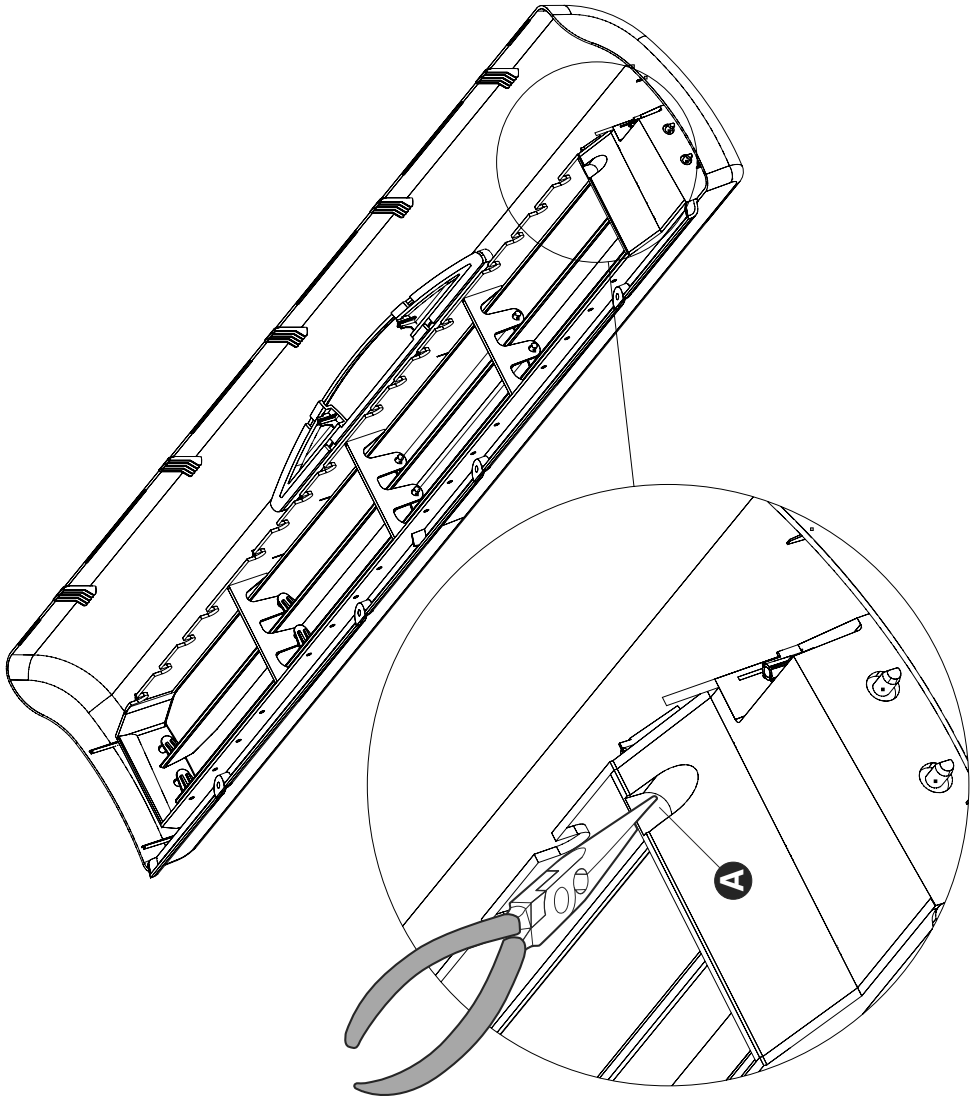


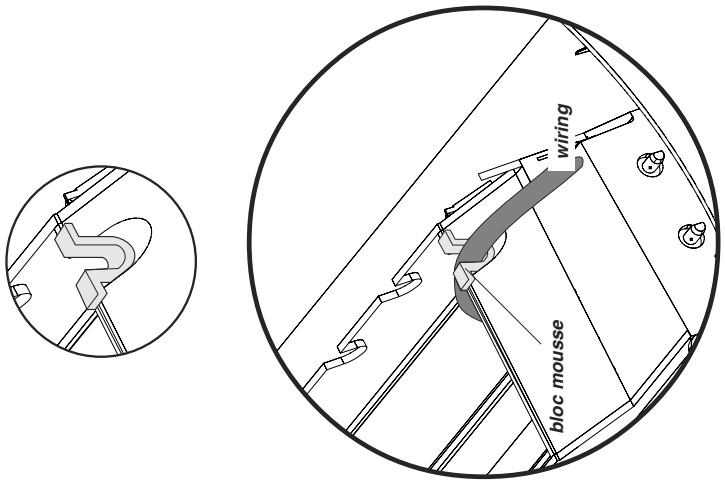
Fig.3

KIT INSTALLATION : (Fig.3)

- On the unit top :

• Using flat pliers break the plastic A (for the heater cable)

• Place the foam insulation in the groove (to prevent air by-pass)



KIT INSTALLATION : (Fig.4)
PXD 12 - 15 - 18 - 24 - 28 - 32
- *On the electric board*

- *Your unit is configured as **HEATPUMP** without electric heating*
- *To configure as **HEATPUMP** with electric heating*

- *Remove the plug marked **PXD-RC** (heapump) and replace it with the plug marked **PXD-SH** (heatpump with supplementary heaters) (fixed on the control board)*

*Heatpump **without** heaters*	***243211***	***PXD-RC***
*Heatpump **with** heaters*	***243213***	***PXD-SH***

REASSEMBLY
- *Reconnect the wiring between the PXD and the unit top*
- *Re install the unit top on the unit taking care to pass the wires in the groove as shown below*
- *Stick the wiring diagram in the side panel above the existing wiring diagram*
- *Replace the unit top screws then the sides and return air grille*

CAUTION

THE DISCHARGE PORT OF THE APPLIANCE MUST NEVER BE COVERED OR OBSTRUCTED BY A CURTAIN, CLOTH, ETC...

- *A label "DO NOT COVER" is supplied with the kit. Place it on the rear of the discharge frame as shown below.*

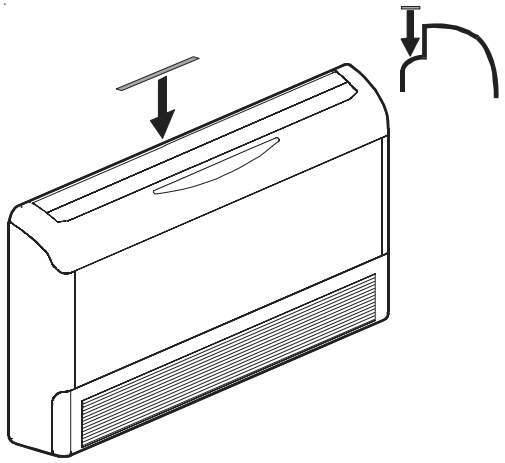
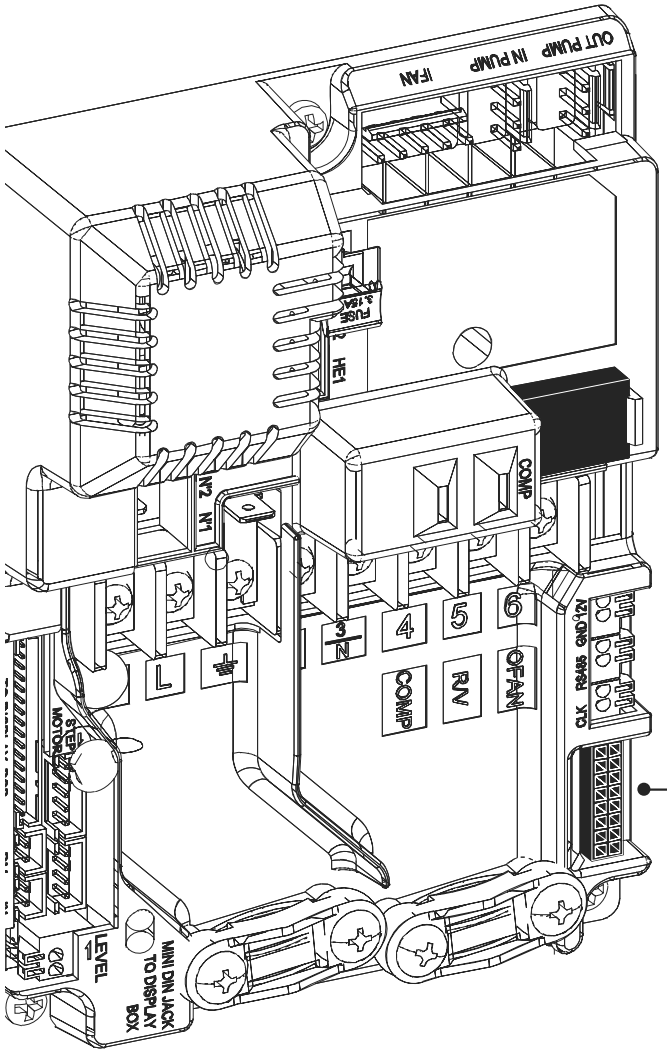


Fig.4

PXD 12 - 15 - 18 - 24 - 28 - 32



WARNING:
The plug has a small arrow to indicate the correct orientation. The side with the arrow must be towards the back of the unit.

(metal panel)

APPENDIX A

INSTALLATION AND OPERATION MANUAL